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THE AUTOMOBILE

WEEKLY NEW YORK—SATURDAY, APRIL 8, 1905—CHICAGO 10 CENTS

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THE AUTOMOBILE

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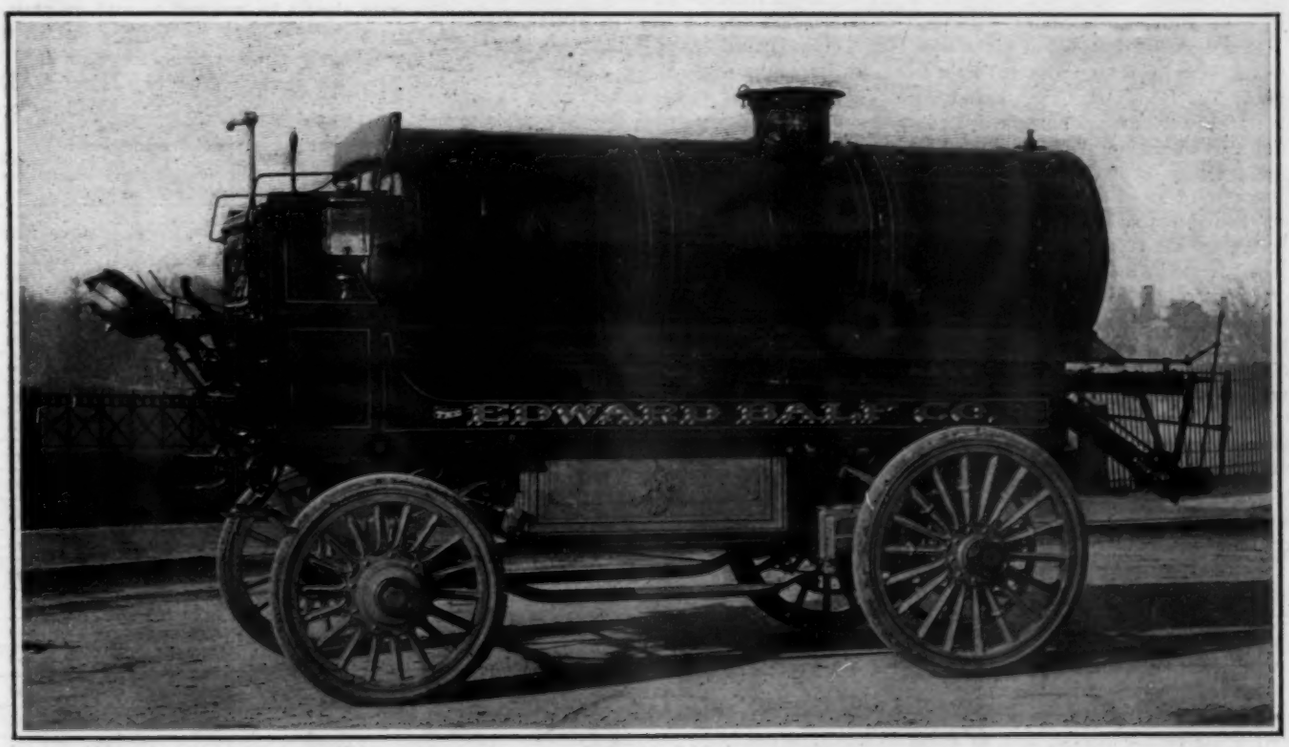
AN AUTOMOBILE AID TO GOOD ROADS.

IT is most appropriate that the automobile to which good roads are of the utmost importance, should, in suitable forms, prove to be an efficient means of maintaining road surfaces in good condition, doing the work better in every way than the horse-drawn machines heretofore used for such purposes. It would probably be a difficult matter to select a more prosaic form for an automobile than that of a street sprinkler; and it would also be difficult to think of anything more likely to be missed on a windy, dusty day. The illustration on this page shows an electrically propelled street sprinkler which is now in regular service in Hartford, Conn., covering daily from thirty to forty miles of streets, which is about double the distance covered by a two-horse sprinkler with a change of horses; in other words, the electric machine does about double the work of four horses. It has been pronounced a complete success by its owners, the Edward Balf Co., street sprinkling contractors.

In general appearance the new machine strongly resembles its prototype, the horse-drawn sprinkler, having the familiar iron tank, which holds 600 gallons of water, and the same arrangement of sprinkling pipes in the rear. The tank is mounted on a medium weight electric truck chassis; an underslung Exide battery of 44 cells furnishes current for two motors normally rated at eight to ten horsepower at six miles an hour, the normal speed of the machine. The chassis was furnished by the Electric Vehicle Co., of Hartford, with whom the order was placed, and is one of their regular electric truck outfits with slight changes necessary to adapt it to the new conditions of service.

The owners of the electric sprinkler believe that the experiment will continue to advantages, the machine costs nothing to be successful, and state that among other



ELECTRICALLY DRIVEN WATERING CART BUILT BY ELECTRIC VEHICLE CO. IN SERVICE IN CITY OF HARTFORD, CONNECTICUT.

maintain when not in use, as in winter or wet weather; the horses used with the old machines are, of course, a constant expense whether they are working or not.

California Auto Law.

Special Correspondence.

SAN FRANCISCO, Cal., March 27.—The California automobile law has just been signed by the Governor, and is now in effect. Penalties for infractions of the registration section, however, do not go into effect until April 22.

The important feature of the bill, which was drawn at the instance of the Automobile Club of California, is the fact that it does away with prohibitive legislation on the part of boards of supervisors of the various counties and other local authorities. County officials may regulate the speed of automobiles, but, except under stipulated rules, any such regulation must apply to all vehicles, and in no event can be made less than ten miles an hour.

The provisions of the law, in brief, follow:

Automobiles are permitted upon all highways except such as are by law limited to horses and light carriages, but may be excluded from any burying ground.

After April 22, 1905, owners must have registration certificates and a registered number for their cars, issued by the Secretary of State. The cost of registration is $2.

Chauffeurs must procure registration certificates from the Secretary of State. Cost, $2.

Non-residents are allowed to operate their machines under the registration of their respective home States.

Cars must be provided at night with two white lights in front and a red light in the rear. The front lamps must bear the number of the car. Lamps must be lighted at all times when running between an hour after sunset and an hour before sunrise.

A rate of speed not exceeding four miles an hour approaching dam, sharp curve, bridge or steep descent, and while on the same; ten miles an hour in business sections of incorporated cities and towns, or in residence sections of cities and towns where the houses average less than 100 feet apart for distances of not less than one-quarter of a mile, provided suitable signs are placed by the authorities in residence sections; fifteen miles an hour in incorporated cities and towns outside of business sections except where suitable signs are erected by the roadside; twenty miles an hour outside of incorporated cities and towns.

Local authorities may limit the speed of automobiles in public parks or on parkways, but must, in that event, place signs at the entrance of such parks or along such parkway, indicating the speed permitted.

Drivers of automobiles must stop on signal by the raised hand from persons driving or leading restive horses, and, in going in the opposite direction, must remain at full stop until such horses have safely passed.

Care and Preservation of the Lead Cell Exide Storage Battery.

INSTRUCTIONS for the proper care and preservation of the lead cell Exide storage battery are contained in a pamphlet just issued by the manufacturers. These embody so many practical hints, and the use of this battery is so widespread, that we here reprint excerpts from the pamphlet which will be read with much interest by users of electrical vehicles. Attention to details is the secret of success in the preservation of batteries in good order. Where the owner does not care to undertake the actual work himself, it is well to be informed as to the requirements.

CHARGING CONNECTIONS.

*The charging current must in all cases be "direct," never "alternating." The positive terminal of the battery must be connected to the positive terminal of the supply circuit, so that the battery will be charged in the right direction. Charging in the reverse or wrong direction will seriously damage, if not ruin, a battery.

In all cases, when charging from trolley or other grounded circuits, the battery must be connected on the "ground" side, to avoid shocks when examining the battery and danger of breaking down the insulation.

CHARGING BATTERIES IN VEHICLES.

Place controller handle and vehicle switches in the position given in the instructions furnished with the vehicle.

Open the carriage body as much as possible, and do not allow a lighted match or other naked flame near the cells while charging.

The lamps on the vehicle must be turned off while charging, as they are liable to be burned out by the increased voltage of the battery if they are lighted at this time.

The bell must not be rung while the charge is in progress.

With the battery switch on the switchboard open and with all the resistance in, place the charging plug in the receptacle on the body. Now close the battery switch, and, by moving the rheostat handle and watching the ammeter, adjust the current to the proper rate for the size of the battery in the vehicle, as indicated in the accompanying table, which shows the starting and finishing voltages and current for the different sizes and types of batteries.

The starting voltage, which is the same as "volts at start" (Table II., 2d column), is the pressure required at the battery terminals to start the charge at the rate given in Table I., 2d column. The finishing current, or "current at finish" (Table I., 3d column), is the reduced rate at which the charge should be completed.

*Copyright, 1905, by the Electric Storage Battery Company.

The final voltage, or "volts at finish," as in Table II., is given only approximately, because this may be either somewhat above or below the figure given, according to the temperature of the battery or the age of the plates. A new battery will have a higher "final voltage" than an old one under the same temperature conditions, and both old and new batteries will read higher with the temperature low than with it comparatively high; so in view of the final voltage being changeable a fixed voltage must not be considered in determining the end of charge, but rather a maximum voltage, this being determined by noting when the voltage, as the end of charge approaches, stops rising.

GENERAL CHARGING INSTRUCTIONS.

The charging instructions in general terms, then, are: After a charge is begun the current should be kept at the "starting rate" as indicated in Table I. until the voltage reaches the "finish" approximate figure, which is on the basis of 2.55 volts per cell, and it should then be immediately reduced to the "finish current" rate, and continued at this rate until the voltage stops rising, the readings being taken at one-half hour intervals. For example, if the battery to be charged consists of 24 cells, type 9 PV, the charge should be started at 19 amperes, and the rate kept at this figure until the voltmeter indicates 61 volts; when this voltage is reached the rate should be reduced to and maintained at 8 amperes until the voltage (which fell after the rate was reduced) stops rising, or, in other words, reaches a maximum. The figure at which it stops rising will, as pre-

Table I.—Rate of Charging Current

TYPE OF CELL.	CHARGING CURRENT. Rate in Amp. Start	Finish	OUTSIDE DIMENSIONS OF JARS. Length	Width	Height
5 A. V.	8	4	1 13/16	5 1/16	10
7 A. V.	12	5	2 1/16	5 1/16	10
9 A. V.	16	7	3 1/4	5 1/16	10
11 A. V.	20	8	4 1/4	5 1/16	10
13 A. V.	24	10	4 11/16	5 1/16	10
15 A. V.	28	12	5 1/16	5 1/16	10
5 P. V.	10	4	2	5 1/16	11 1/2
7 P. V.	14	6	2 1/4	5 1/16	11 1/2
9 P. V.	19	8	3 1/4	5 1/16	11 1/2
11 P. V.	24	10	4 1/4	5 1/16	11 1/2
7 M. V.	16	7	2 1/4	6 1/4	12 1/2
9 M. V.	22	9	3 1/4	6 1/4	12 1/2
11 M. V.	28	12	4 1/4	6 1/4	12 1/2
13 M. V.	34	14	5	6 1/4	12 1/2
15 M. V.	40	16	5 1/2	6 1/4	12 1/2
17 M. V.	45	19	6 1/4	6 1/4	12 1/2
19 M. V.	50	21	7 1/4	6 1/4	12 1/2
21 M. V.	56	24	8	6 1/4	12 1/2

viously noted, be variable, although in general it will be approximately the same as the voltage (61 volts) at which the high rate of charge must be reduced.

Just in the same manner as the voltage will reach a maximum so will the specific gravity of the electrolyte, and readings of this in various cells of the battery should be taken toward the end of charge with the specific gravity tester provided for the purpose. These readings will act as a check on those taken on the voltage; and, while it will not be found practicable to do this every time the battery is charged, it is very important and should be done at least once a week.

The time required for a charge will, of course, depend upon the amount of the previous discharge. If this has been two-thirds of the rated capacity of the battery, about three hours at the starting rate and an hour and a half to two hours at the finishing rate will be necessary, *i. e.*, from 10 to 15 per cent. more charge than the amount taken out on the discharge is required.

Hurrying a Charge.

If, in case of emergency, it is desired to charge the battery more quickly than usual, or, in other words, to hasten the charge, the early part of the charge is the time when the extra high rate should be used, the completion of the charge being accomplished at the low finishing rate, the same as in normal charging. Much damage can be done by "pounding" a nearly full battery at a high rate.

Charging Through the Night.

If, after a late evening run, the vehicle will be wanted early the next morning, the battery may be charged during the night without an attendant being present; but in doing this great care must be taken not to excessively overcharge. A careful estimate of the amount of current required should be made, and the rate of charge based on this estimate. If, say, 72 ampere hours is required to recharge, and the time available is nine hours, the average rate of charge must be 8 amperes. If the charging is done from a 110-volt circuit, the rate at the start should be about 10 amperes; if from a 500-volt circuit, about 9 amperes; as, in charging from a source with constant voltage, such as a lighting or trolley circuit, the rate into the battery will fall as the charge progresses.

Table II.—Voltages when Charging.

Number of Cells.	Volts at Start.	Volts at Finish (Approx.)	Number of Cells.	Volts at Start.	Volts at Finish. (Approx.)
12	26	31	30	64	76
14	30	36	32	69	81
16	34	41	34	73	87
18	39	46	36	77	92
20	43	51	38	82	97
22	47	56	40	86	102
24	52	61	42	90	107
26	56	66	44	95	112
28	60	71	..	..	...

General Instructions.

Great care must be taken not to excessively overcharge the battery, especially at the higher rate, as deterioration of the plates will result. If, for any reason, such as bringing up a low cell, an overcharge is necessary, then the lower rates should be used. In general, no additional mileage will be obtained by excessive overcharging.

A very noticeable increase in the temperature of the cells is a direct indication of excessive overcharge.

The temperature of a battery must not be allowed to exceed 100 degrees F., the cells near the middle of the battery to be used as a guide. If the temperature is found to be running up toward the safe limit (100 degrees F.), the charging rate should be reduced or the charge stopped for a while.

After completing the charge and before disconnecting the battery from the switchboard, always turn the rheostat handle back and open the battery switch.

Voltage readings should be taken only when the battery is charging or discharging. Readings taken when the battery is standing idle are of no value.

Charging Batteries When Removed from Vehicles.

When a battery is being overhauled or out for cleaning, it may be more convenient or suitable to charge it while out of the vehicle. In such a case the trays must be connected together in series and to the charging source in relatively the same manner as if they were in the vehicle; that is, the positive (+) terminal of one tray must be connected to the negative (—) terminal of the next tray, and the two remaining terminals, one positive and the other negative, must be connected respectively to the positive and negative terminals from the switchboard, but not until all of the trays have been connected together. If there is no ammeter on the board, connect one in series in one leg of the charging circuit.

Great care must always be taken to have the polarities correct and the wire or cable for the connections of ample size to carry, without heating, the heaviest current used in charging. The size used in the vehicle will be proper.

The operation of charging is then carried on in precisely the same manner as if the battery was in the vehicle.

Excessive Overcharging.

Excessive overcharging may occur in two ways—by charging too long and by charging too frequently, or every time a vehicle has been run a short distance. For instance, if a battery will run a vehicle 40 miles and the vehicle is run 5 miles, then charged, taken out again, run 10 miles and is charged, then is given another run of 10 miles and is charged, and again a third run of 10 miles is made, followed by a charge, the vehicle has been run only 35 miles, but the battery has been charged four times. The greatest wear on the plates of a battery occurs during the final part of a charge. In treating the battery as here discussed, it was charged three times oftener than necessary, and even then did not make the mileage it was capable of on one full charge. In other words, when a vehicle is in daily use for short runs, do not charge until more than 50 per cent. of the capacity has been exhausted. By following this course, not only is money saved on the current bill and the life of the plates increased, but the battery will give a greater mileage.

Batteries Occasionally Used.

A battery standing unused for some time will lose a part of its charge, due to local losses in the cells. This can seldom be satisfactorily regained by merely giving a freshening charge. If full capacity is desired, the battery should first be given a complete discharge and this followed by a full charge.

If a battery stands idle it should be given a freshening charge once in two weeks, at the finishing rate given in Table I., and the charging stopped when the cells begin to gas. Don't overcharge.

Taking Batteries Out of Commission.

Where a battery is to be out of service for several months, and it is not convenient to give it the freshening charge every two weeks, it should be taken out of commission. It should first be charged until every cell is in a state of full charge. If there are short-circuited cells, they should be put in condition before the charge is commenced, so that they will receive the full benefit of the charge. Then remove the elements from the jars (see subsequent paragraph on this topic), separating the positive groups from the negative groups, and place in water for about one hour to remove electrolyte adhering to the plates; then withdraw the groups and allow them to drain and dry. The positives, when dry, are ready to be put away.

If the negatives, in drying, become hot enough to steam, they should be again rinsed or sprinkled with clean water and then allowed to dry thoroughly. When dry the negatives should be replaced in the electrolyte (of from 1.275 to 1.300 specific gravity), care being taken to completely immerse them (two groups may be placed in a jar and the jar filled with electrolyte), and allowed to soak for three or four hours. After rinsing and drying, they are ready to be put away.

The rubber separators should be rinsed off in water. Wood separators, after having been in service, will not stand much handling, and had better be thrown away. If it is thought worth while to keep them, they must be kept immersed in water or weak electrolyte, and in reassembling the electrolyte must be put into the cells immediately, as wet wood separators must not stand exposed to the air for an unnecessary moment, especially when in contact with plates.

When putting the battery into commission, it should be treated in the same manner as if it were new, and the regular instructions for assembling and putting into commission a new battery followed.

DISCONNECTING CELLS.

The best method of disconnecting cells assembled with pillar straps, for the purpose of replacing broken jars, cleaning or taking out of commission, is to use a 5-8 inch twist drill bit, in a carpenter's brace, boring down into the top of the pillar about 1-4 inch; then pull off the connected sleeve from the pillar. By following this method, all parts may be used again.

When cells are equipped with L or top straps, the straps should be cut with a sharp knife or chisel midway between the cells.

The jars should be thoroughly cleaned with fresh water, no sediment being allowed to remain.

OLD ELECTROLYTE.

The electrolyte may be saved and used when reassembling the battery, provided great care is exercised when pouring it out of the jar, so as not to draw off with it any of the sediment. It should be stored in convenient receptacles, preferably carboys, which have been thoroughly washed and never used for any other purpose. The electrolyte saved in this manner will not, however, be sufficient to refill the battery, and as some new will be required, in general it is recommended that the old be thrown away and all new electrolyte (1.210 specific gravity) used when reassembling.

(To be continued)

Autos in Guatemala.

The roads in Guatemala are not fit for automobiles; in fact, there are few that could be traversed by a machine, writes Consul-General Alfred A. Winslow, from Guatemala City. Even the streets in Guatemala City have hardly tolerable paving. This is doubtless the reason there is only one bicycle and one autocar with two seats in this city. I think there are no others in the country. There are no regulations as to the use of automobiles.

The customs duty on motor cars is the same as that on carriages, the duty being assessed per kilogram (2.2 pounds) as follows: Up to 100 kilos (220 pounds), 30 cents; 100 to 250 (550 pounds), 28 cents; 250 to 500 (1,100 pounds), 25 cents; 500 to 750 (1,650 pounds), 22 cents; 750 to 1,000 (2,204 pounds), 20 cents; 1,000 kilos and upwards, 17 cents.

These duties must be paid 30 per cent. in United States gold and 70 per cent. in Guatemala currency, so that, at the current rate of exchange, the equivalent in United States gold of the duties is 36 per cent. of the nominal rates, as the currency of Guatemala is worth now 8 cents gold for one peso.

New Use for Goggles.

Engineer Frank Benjamin, of the Chicago and Alton Railroad, probably was the first locomotive driver in the world to stick his head through a cab window with a pair of automobile goggles protecting his eyes. But since that innovation, more than two years ago, the use of automobile goggles has spread, until dozens of the engineers on that line regard them as indispensable to their comfort and to the best interests of their work.

Benjamin has been driving one of the fast passenger engines on the Chicago-St. Louis run. It is a leviathan of its kind, with driving wheels 7 feet 2 inches in diameter, and capable of reeling off seventy miles an hour, under ordinary pressure upon the time card. In the dry season of summer, two years ago, Benjamin discovered that the dust was adding to the smoke and cinders in a trying test of his eyes. At a certain noted grade on the line, the main roadway between two good-sized towns parallels the tracks of the railroad, and at the top of this long stretch it was common for the engineer to find an automobile enthusiast waiting to give the big locomotive a race for the foot of the hill, nearly two miles away. It was this run through the dust and heat, observing the protecting goggles of the automobile driver, which caused Benjamin to invest in goggles on his return to Chicago. On a good many occasions since then Benjamin has raced the automobile experts down this hill, losing to them in most of the races where the cars of heavier type are used, yet feeling that he has not had the handicap of unprotected eyes.

So far as known, only the Alton engineers have affected the automobile goggles. Their experience with them has been satisfactory in every way. Not only the dust and smoke and cinders wear upon the eyes of the men in cabs of fast engines, but the pressure of the wind becomes almost unbearable at times when running into it. After the ordinary run over his division, Benjamin's face presents an odd appearance. Smoothly shaven, his face is black and grimy, save for the great ellipses around the eyes, where the goggles leave the skin almost as white as when he left the roundhouse at the other end.

Benjamin is an enthusiastic disciple of the goggles, and if he were the president of a great system of railroads, he says that automobile goggles would be a part of the equipment of every locomotive in the service.

ENGINEER BENJAMIN EQUIPPED WITH GOGGLES LOOKING OUT OF C. & A. LOCOMOTIVE CAB.

Upon the integrity of the bolts and nuts in your car your life must frequently depend. Therefore, you cannot be too careful about these details. It is frequently possible to replace ordinary black iron bolts with steel machine bolts, which not only have a more mechanical appearance, but are made of better material and have better threads and longer nuts. Being finished, they can be very closely fitted to the holes, and thus will not wear loose as rapidly as the rough bolts. Castellated or slotted nuts, or some secure nut-locking device should be used in all parts subject to vibration.

Proposed Automobile Speedways in the Vicinity of New York City.

MANY projects have been advanced during the last three or four years for the construction of private automobile speedways in territory easily accessible to New York and the contiguous cities, but up to the present time none of them has ever been brought to realization, because of the great expense involved. The growth of the industry and the rapid development of racing, especially in the direction of road contests and straightaway competition, have brought well within the range of practical accomplishment broad-gauge plans that a year or two ago would have appeared visionary.

One such scheme is that of a twenty-mile racing circuit on private property near the mouth of the Toms River on the shore of Barnegat Bay, New Jersey, as outlined in last week's issue of THE AUTOMOBILE. This embraces also a five-mile oval and grandstand, with every accommodation for enjoyment of the sport of automobile racing, as well as auto boat racing on the bay and athletic competition of varied character.

A similar and even more elaborate project is being pushed energetically just now, with many indications of being carried into effect this season. A meeting is to be held this week at the rooms of the Automobile Club of America for the purpose of organizing a club to build and manage a twenty-mile speedway which it is proposed to construct on a tract of 4,000 acres of farm land near Pennington, New Jersey. The object is to provide a course not too far from the important automobile centers where races and speed trials can be held under actual road conditions without interfering with the rights of others, and where manufacturers can send their cars to be thoroughly tested out at top speed over long distances. To avoid all danger of accidents to users of the public highways and any conflict with the state law which expressly prohibits any competitive speeding on the public roads, it is planned to have the speedway cross such roads either above or below grade, wherever crossings are required.

The plans for this speedway are so far advanced that a company has been incorporated at Trenton, with $100,000 capital stock, to carry the project to realization, and Asa Goddard, of Worcester, Mass., president of the Worcester Automobile Club and chairman of the highways committee of the Massachusetts Automobile Association, this week began making surveys of a course for the speedway, assisted by County Engineer Frank J. Eppele, from Trenton.

The incorporators of the company are Walter H. McDougall, Louis Kunkel and James O. Walsh. Mr. Kunkel personally holds a large portion of the land which it is proposed to convert to the new purpose and has secured options on most of the rest of the tract. He is also interested in a hotel located on the tract near Pennington, and is related to Emerson Brooks, treasurer of the Automobile Club of America, who has succeeded in interesting in the scheme such well-known members of the club and automobile fraternity as President Dave H. Morris, W. E. Scarritt, Windsor T. White, Col. Albert A. Pope, W. Gould Brokaw, Elliott C. Lee, president of the American Automobile Association; James B. Dill, E. R. Thomas, B. M. Shanley, Augustus Post, A. R. Pardington, A. D. Proctor Smith, S. B. Stevens, H. B. Joy, George H. Day, T. M. Hilliard, Frederick R. Pratt, E. H. R. Green, H. H. Franklin, Isaac Starr, Jr., and N. D. Lancaster.

The property is located about midway between New York and Philadelphia, eight miles from Trenton and the same distance from Princeton, where it is accessible by the Philadelphia and Reading and the Pennsylvania railroads, by trolley from Trenton and by excellent macadam roads from New York and Philadelphia. The land is rolling and attractive, and a course can be laid out to include light and heavy grades, straightaway stretches and sweeping curves.

The estimated cost of construction, covering the speedway, grandstand, clubhouse and garages, is approximately $500,000. Charter members of the club for the formation of which the call has been issued, are to become stockholders, who will take over the charter of the Inter-City Automobile Speedway Company and become owners of the real estate and all improvements. As only about 1,000 acres of land will be needed for the race course and grounds, 3,000 acres will remain which can be sold or rented, as desired.

The proposed route for the speedway is outlined in the prospectus as follows: Beginning near the Philadelphia and Reading railroad station in Pennington, extending northwesterly to the foot of a range of hills, thence westerly, gradually ascending for about five miles and passing through a ravine to the summit, thence descending gradually southward, skirting the village of Titusville and following the P. R. R. tracks and the bank of the Delaware River to a point near Washington's Crossing; thence eastwardly toward Pennington and the grandstand. For several miles on the homestretch, which will be practically straight, the route will provide natural road conditions, without sharp turns and well suited to racing.

Rumors of other projects for speedways on Long Island and Staten Island have been current during the past winter, but none of them has taken such definite shape as either of the two herein mentioned, and it seems probable that there is nothing more tangible about them than there has been about other similar schemes broached in previous years.

However, a less ambitious plan than any of these but one that, like them, has for its object the provision of facilities for the speeding of cars where it will be safe and legal, has just been announced. Aside from the promotion and management of regular race meets on the Morris Park track, in New York, in which both amateur and professional drivers may take part, the newly organized Morris Park Motor Racing Club proposes to allow its members to use the track on any day for practice and impromptu brushes, and, in addition, to arrange special events for the club members. The purpose is to foster the competitive spirit of owners of cars without interfering with the rights of others on the highways.

As at present outlined, the membership of the club will be limited to 250, and there will be a governing board of twenty-one members. The race committee will have charge of the club championship event and the trials of speed between members. Dave Hennen Morris, president of the Automobile Club of America, is president of the Morris Park Motor Racing Club, and Albert Reeves is secretary. The club headquarters will be at the Morris Park track.

The immediate result of the putting into effect of these several projects should be a wholesome development of interest in such national and international events as the Vanderbilt Cup race, the Gordon-Bennett contest, the Florida tournament and the Cuban road race. Legitimate racing and speed trials on the road should soon give a desired variation from track contests, and manufacturers would be enabled to more rapidly improve their product through having facilities for testing cars built for the big races without entailing the delays and heavy expenses of sending their machines all the way to the Ormond-Daytona beach to be tried out.

VANDERBILT HELD FOR TRIAL.

Arrests of automobile drivers for exceeding the speed limit have increased rapidly in New York during the last four weeks, as the weather has grown warmer and the roads dried off. One such arrest that caused more than the usual amount of newspaper comment was that of Alfred G. Vanderbilt, who appeared in the Harlem police court last Saturday, accompanied by his attorney, and was held for trial in $500 bail by Magistrate Baker. The arrest had been made by a bicycle policeman, who charged Mr. Vanderbilt with driving at a rate of eighteen miles an hour, having timed the car a mile in 3 minutes 22 seconds. After hearing both sides, the court held Mr. Vanderbilt for trial in the Court of Special sessions. Mr. Vanderbilt did not appear personally in Special Sessions on Wednesday of this week, but his attorney was present and entered a plea of not guilty for him, and asked for a postponement of the trial, which was granted.

HIGH-POWERED BOATS FOR MONACO MEET.

Mercedes, Panhard, Brasier and C. G. & V. Eight-Cylinder Craft as Seen at the Paris Shops a Fortnight Before Opening of Mediterranean Races — Fast Trial of "Mercedes-Charley."

Special Correspondence.

PARIS, March 22.—As the big meet at Monaco draws closer, more and more of the boats that are to take part are shown to the public. The entries for the meeting include 106 boats of different types—cruisers and racers. This week has seen the appearance of the Mercedes, the Brasier, the C. G. & V. and the Panhard boats, besides a few others of minor importance.

THE 180-H. P. "MERCEDES-CHARLEY."

The Mercedes concern enters three boats in the events two large decked cruisers and a racer—the *Mercedes-Charley*. The last racer is a twelve-meter (forty-foot) boat, built much on the same lines as the *Mercedes IV*, which last year won the Calais-Dover cross-channel race. The American *Dolphin* lines are very distinctly seen in this craft, and it is interesting to note that the designer, M. Quernel, a distinguished French torpedo-boat designer, who designed this hull, developed the lines he gave to it by study without regard to conventional lines or the performances of other auto boats—lines which he considered both by intuition and calculation as likely to use most efficiently the power at his disposal. It is to be regretted that no more particulars are to be obtained concerning this hull, as they should certainly prove most interesting, but all concerned make it a point to keep the most absolute secrecy about it. Mr. Quernel, however, gave a few figures to the press after the trials which took place yesterday:

The average speed was 52 kilometers (32.3 miles) an hour, the highest speed down stream having been 54.72 kilometers. The engine consists of two 90-horsepower 1904 Gordon Bennett motors coupled together on a single shaft line, making eight cylinders each of 160 mm. bore by 140 mm. stroke.

This boat is expected to be one of the stars of the Monaco meeting.

THREE PANHARD BOATS.

The Panhard firm will have three racers in the meeting. The four- and six-cylinder engines which will be placed in the two smaller boats have already been described in THE AUTOMOBILE. The *Panhard and Levassor*, named after the firm, will be the largest of the three. It will run in the sixty-foot class and will carry a 200-horsepower engine consisting of two 115 nominal horsepower motors coupled on the same shaft line, the engines being connected in every way so as to run separately if desired. The results obtained at the trials were kept secret. The hull follows the standard lines of the Tellier boats this year, which lines were experimental last year in the *Hotchkiss* and have been improved this year after a study of the performances of that boat.

The twelve-meter boat of the Panhard construction will be called the *Palaisoto* and will carry the six-cylinder motor. The eight-meter boat will be *La Rapière*, being a duplicate of *La Rapee III* of last year, which was the champion of her class, except that the hull will be much narrower and have finer lines. The engine is a four-cylinder of 150 horsepower, the cylinder dimensions being 170 mm. bore by 170 mm. stroke. The boat has shown a speed of forty-five kilometers an hour in the trials at 900 R. P. M. engine speed, which is 300 revolutions below the speed for which the engine and screw were designed. The maximum power will be developed only in secret trials before the meeting.

C. G. & V. EIGHT-CYLINDER BOAT.

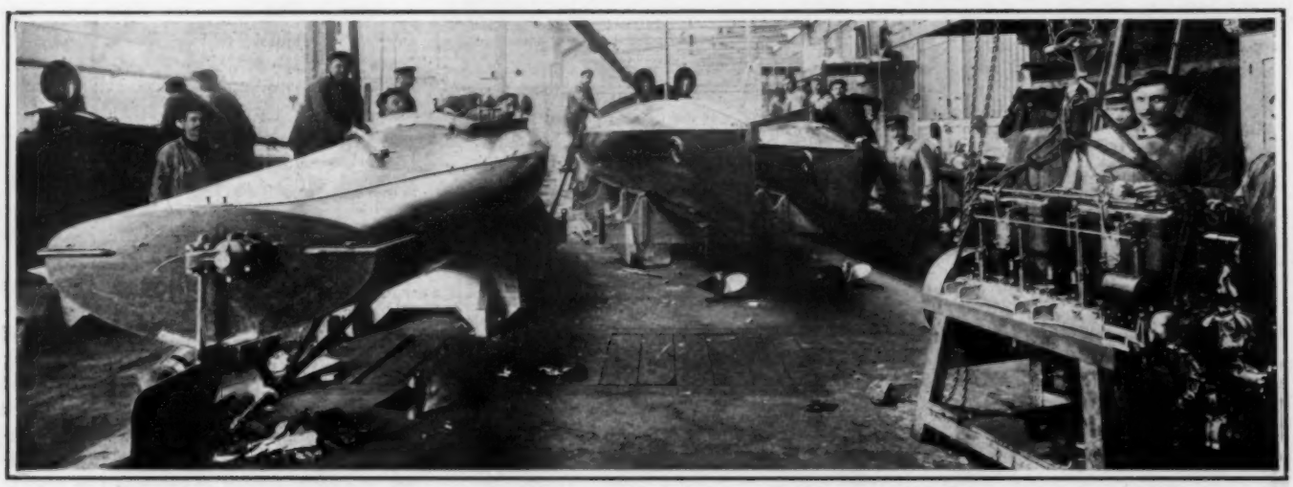
The Charron, Girardot & Voigt boat carries an eight-cylnder engine that develops 100 horsepower and is of the same construction as the ordinary four-cylinder motors of the same make and of half the power. The crankshaft and camshaft are mounted on ball bearings throughout and a single carbureter feeds the whole engine. The hull, which is an experiment on new lines, especially as regards the after part, is not launched at the date of writing.

GORDON BENNETT ENGINE IN BRASIER BOATS.

The Richard Brasier firm is also making three boats of different powers. Its engine of the 1905 Gordon Bennett cup car will be used, but as the boats have not yet been launched, very little of interest can be said concerning them. The engine is exactly similar to last year's except in size, and the hulls are a compromise between last year's *Trèfle-á-Quàtre* and the Tellier boats. It is feared that these boats will not be ready in time for the races. The bronze founders' strike now on in Paris has prevented much of the bronze work of the boats being finished so far; one carbureter only was made when the strike started, and it is with this single apparatus that all the engines were tested. The cylinder bore is 180 mm. and the stroke 150 mm. The *Grand Trèfle* carries two engines and has two screws, M. Brasier having devised and patented an equalizing gear, on car differential principle, which causes the screws to turn at absolutely equal speeds even if the engines run at different rates. He does not wish, however, to show the mechanism at present.

MADAME DU GAST'S "TURQUOISE."

An interesting little craft that will be watched by the technicians is the *Turquoise*, made entirely to the order of Madame du Gast, the famous woman driver. Her boat, of the thirty-foot class, is extremely light. The hull weighs 180 pounds, while the engine weighs 380 pounds. The engine has eight cylinders placed in two rows of four each, set at an angle of 90 degrees on a single shaft. The hull is a Tellier construction.



AUTO BOATS BUILDING FOR THE MONACO MEETING IN THE ASSEMBLING SHOP AT THE BRASIER AUTOMOBILE FACTORY.

"Trefle-a-Quatre II" in left foreground, "Grand Trefle" in the center, and "Petit Trefle" in right background. Original "Trefle-a-Quatre" seen at extreme left, in background. Note the Car Steering Gear Attached to the Transom of "Trefle-a-Quatre II," Into Which the Head of the Rudder Stock Passes.

RELIABILITY CONTEST IN FAR AUSTRALIA.

Nine Out of Thirty-five Starters Make Perfect Scores in 572-Mile Run from Sydney to Melbourne, Accomplished in Five Daily Stages.—Five Motor Cyclists Finish.

From Sydney, the capital of New South Wales, to Melbourne, the capital of Victoria, in five days without any stops for repairs and within set time limits, was the severe task arranged for a reliability test of automobiles and motor cycles held in Australia between February 21 and 25. The total distance of 572 miles was divided into daily stages varying from 100 miles to 129 miles, and conditions and regulations as to official observers, controls and penalizations very similar to those that prevailed in the Boston and Pittsburg reliability contests in this country in October, 1902 and 1903, were made for the conduct of the affair. The event was organized by the Dunlop Tire Company with the object of fostering automobiling in the Antipodes and attracting public attention to the automobile and its possibilities over rough roads.

The results were very creditable, mail advices just at hand showing that of fifteen starters in the "heavy car" class, nine finished within the time limit, four with perfect scores of 2,500 points and one with only one point to his discredit; of eight starters in the light car class all finished and three had perfect scores; and of twelve starters on motorcycles, five completed the run and two had clean sheets.

The aggregate riding times and average rates of speed for the full run were: Heavy cars, 36 hours, 30 minutes, rate, 15 5-8 miles an hour; light cars, 41 hours, 30 minutes, rate, 15 5-8 miles an hour; motorcycles, 32 hours, 40 minutes, rate, 17 3-4 miles an hour.

The nine competitors who made perfect scores for the entire journey of 572 miles, were as follows: "Heavy cars," H. L. Stevens, 12-14-h.p. Darracq; Sydney Stott, 12-h.p. Decauville; W. S. Ross, and H. Tarrant, both 10-h.p. Argyll cars. Light cars: J. G. Coleman, 7-h.p. Swift; J. H. Craven, and S. H. Day, both 8-h.p. De Dion cars. Motorcycles; B. James, 1 3-4-h.p. Minerva, and V. H. Bard, 3 1-2-h.p. Brown. By some curious coincidence all the contestants who made perfect scores were residents of the State of Victoria, although eight of the twenty-two who finished were from New South Wales, South Australia or France. Five of the seven automobiles were fitted with English Dunlop motor tires.

Americans will be especially interested in the fact that among the spectators who saw the finish on Saturday, at Coburg, near Melbourne, was Charles J. Glidden, the Bostonian, who happened to be in Melbourne at the time on his automobile tour around the world. He was accompanied by Julius Knight, Chairman Fitzgerald, of the Dunlop Tire Company, and several city councilmen, while all the leading automobilists of Melbourne were in attendance.

After finishing the run at Coburg the drivers who made perfect scores ballotted for positions in the line of formal finish at the Haymarket in Melbourne, where each was introduced to Sir Reginald Talbot, governor of the State of Victoria, who had driven up in his motor car and congratulated the successful contestants as they were introduced.

The cars were then taken in charge by the Dunlop officials and sealed, to be delivered over to their drivers for the deciding event, which was to be a run of 140 miles on March 6, from Melbourne to Ballarat and back, a time limit being set for both light and heavy cars.

Although most of the contestants in the five days' test were satisfied to comply with the requirements of the regulations and preferred to take no unnecessary risks by fast driving, a fast pace was set throughout by H. L. Stevens in his Darracq. He was first to arrive at the end of the journey at Coburg, having accomplished the last day's run of 100 miles in 3 hours 24 minutes. His actual driving time for the 572 miles was 24 hours and his average speed close to 24 miles an hour. Except for the collapse of his battery box on the last day and the spilling of the cells along the road, the car went through without mishap or adjustment, it is reported, the tool box not even having been opened nor the tires pumped up after the start on Tuesday. Twenty-eight gallons of gasoline were consumed on the journey. Although the tires showed evidences of contact with sharp stones, the Dunlop treads on the front wheels and Samson treads on the rear wheels protected them very satisfactorily.

The course was a difficult one, a number of bridges over creeks having been burned away by bush fires, necessitating the rushing of the steep banks of the streams. At one place in Victoria, near the end of the run, a number of contestants got into trouble in quicksand in the bed of one such stream. Holes two feet deep were encountered in the roads, while V-shaped drains across the roads caused severe shocks to the springs.

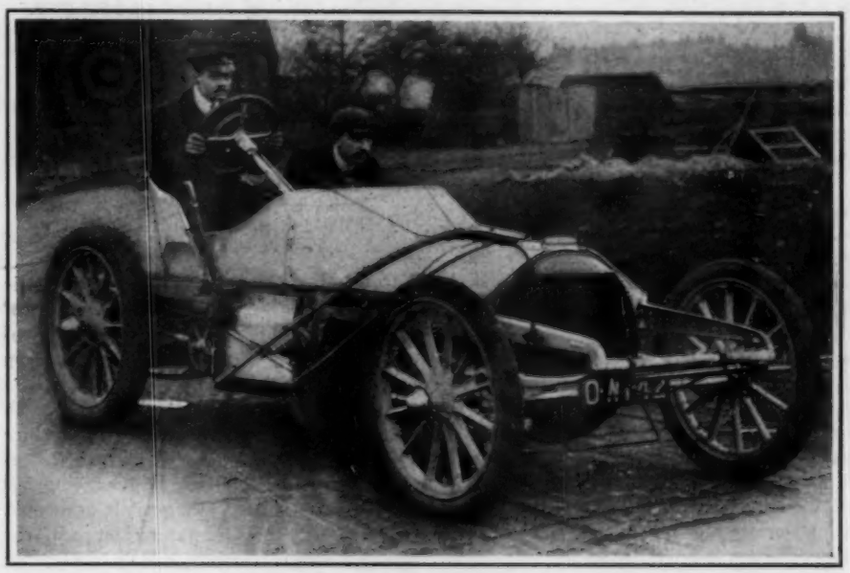
A number of prizes were to be given to the winners in the different classes as determined by the final run set for March 6, the account of which has not yet come to hand.

Wolseley Gordon Bennett Car.

Special Correspondence.

LONDON, March 22.—True to its traditions, the Wolseley Tool and Motor Car Co., Ltd., of Adderley Park, Birmingham, is participating in the British eliminating trials for the Gordon Bennett cup again this year. Last year, at Homburg, this firm sent two cars manned by Charles Jarrott and Sidney Girling to the start, S. F. Edge on his Napier making the third member of the British team. Of these three men there is likelihood of only Mr. Girling again taking part this year on the Siddeley racer which the Wolseley firm is building for Lionel de Rothschild. Mr. Edge will send Arthur MacDonald to drive for him, and Mr. Jarrott will send C. Bianchi, who is at the helm of the car illustrated, one of the new 90-96 horsepower Wolseley racers.

The engine of this car is of the horizontal type, for which the Birmingham firm is noted, and has four cylinders. The crankshaft is of nickel steel, carried in three bearings, and the aluminum jackets are all cast together. The valves operate vertically, the inlet valves being automatic. The centrifugal governor operates on the throttle, which is also operated upon by the hand control, while a foot accelerator pedal cuts out the governor. Ignition is high tension current from batteries and coil.



NEW 90-96 H P. WOLSELEY GORDON BENNETT RACER, C. BIANCHI AT THE WHEEL.

The water is circulated by a pump through a circular aluminum header casting which carries the water supply and is connected with filled tubes arranged in series. A fan is fitted immediately behind the radiator to assist the air draft.

The flywheel is of cast steel and forms the outer portion of the clutch, which is of the usual cone type, faced with leather. A Renold chain takes the drive from the motor to the gear box, which is provided with four speeds forward and one reverse pinion. All the shafts in the gear box run on ball bearings and the gears are made from a specially selected grade of steel. Three-point suspension has been adopted for the gear box, which is arranged so that any twisting strain set up in the frame cannot affect any vital portions of the mechanism.

The rear axle is made from special axle steel of I section. The front axle is made from the solid and not forged.

The foot-brakes are double acting and are metal to metal, expanding in drums formed in one piece with the chain wheel casting, while the side hand lever actuates double acting band-brakes on the outside of the drums. The wheelbase is 104 inches and the tread 55 inches.

Sports Exhibition in 1907.

Special Correspondence.

PARIS, March 21.—The report of the committee appointed by the Government to draw up a scheme for the great national sporting exhibition to be held in Paris in 1907 has just been issued. The committee pronounces strongly in favor of the Champs de Mars as the only site fulfilling all requirements. In reality, the place is ideal; it is within the city boundaries, amply provided with means of communication, the Eiffel Tower and the large Machinery Hall left from previous exhibitions would be utilized, the Seine runs past the ground and on the opposite bank the Trocadero and its grounds will afford a most valuable annex. The only difficulty in the way is that the ground belongs not to the State, but to the municipality of Paris, which has already commenced the work of transforming the ground into public gardens.

The committee proposes to construct a magnificent glass-domed main entrance between the four columns of the Eiffel Tower. On right and left of this will be an exhibition hall united to the permanent palace in the center of the ground behind the Eiffel Tower, which in its turn will be joined to the existing Machinery Hall. Around the main palace will be constructed a racing track twenty-five meters wide and 1,200 meters long, to be used for automobile and cycle races. Garages and repair shops will be installed and a harbor for auto boats will be constructed on the Seine within the exhibition grounds. Altogether an area of 200,000 meters is provided for.

It is estimated that the total income of the exhibition will be $5,600,000, which includes a subvention from the state of $600,000 from the city of Paris. The expenses are estimated at $5,640,000, of which $120,000 will be expended on automobile, power boat and cycle races and competitions.

The exhibition will be divided into nine groups, completely covering all branches of sport. Group 3 is devoted to automobiles and mechanical vehicles and is divided into four classes. Class 12 includes trams, railways, public vehicles, 'buses, fire engines, etc.; Class 13, the construction of automobile garages, tracks and automobile accessories; Class 14 deals with cycles and motor cycles; Class 15 with power boats and various other forms of navigation, and Class 16 with balloons and flying machines. Group 4 is concerned with competitions of various technical matters dealing with both boats and automobiles. The exhibition will be open five months, from May 1 to the end of September.

Mr. Punch Stirred Up.

London *Punch*, much stirred up by newspaper reports concerning an American young lady who has been touring in Europe in her automobile, accompanied by a little white pet pig, recently burst forth into a poetical appeal to British women not to be outdone in up-to-dateness by their trans-Atlantic cousins in the matter of pets. The "poem" runs as follows:

We are losing our great reputation,
Our women are not up-to-date;
For a younger, more go-ahead nation
Has beaten us badly of late;
Is there nowhere some fair Englishwoman
Who'd think it not too *infra dig*,
To be seen with (and treat it as human)
A sweet—pet—fat—white—pig?

There is no need to copy our cousins,
A visit or two to the Zoo
Will convince you there must be some dozens
Of animal pets that would do.
With a "grizzly" perched on your motor,
Just think how the people would stare,
Saying, "Is that a man in a coat or
A big—grey—tame—he—bear?"

Think how *chic* it would look in the paper
(*Society's Doings*, we'll say),
"MRS. SO-AND-SO drove with her Tapir,
And daughter (the Tapir's) to-day.
MRS. THINGUMMY, too, and her sister
Drove out for an hour and a half,
And beside them, (the image of Mr.)
A dear—wee—pink—pet—calf!"

The unwitting cause of this patriotic outburst was Miss Rosamond Dixey, of Boston, Mass., well known in Boston society, daughter of Richard C. Dixey, a wealthy clubman. The young woman, who is twenty years of age, is much given to athletics; is a member of the Berkshire Hunt; and her horses have taken prizes at local shows. Miss Dixey began taking her pet piglet out automobiling while at Lenox, Mass., where the summer residence of the Dixey family is located; and it is reported that she was accompanied by the youthful porker when she drove her car in gymkhana races held at Lenox. When Miss Dixey went to London she took her pig and her car along and set fashionable London agog by appearing in the car with the animal by her side, not once or twice, but frequently.

The awakening of *Punch* to the peril of the hour comes late, however, for as far back as May 14, 1904, THE AUTOMOBILE published a photograph of a fine representative of the

"—— dozens of animal pets that would do."

In this instance the pet was a huge lion, the property of T. J. Mundy, of San Antonio, Texas, and he accompanied his owner and a couple of friends—that is, friends of Mr. Mundy—in an automobile tour of the town. While "Admiral Schley," as the lion was named, could hardly be called "sweet"—the photograph shows a cavernously opened mouth well filled with teeth; and while this pet is decidedly not "little"—he occupied half the tonneau with his body and hind legs and half the front seat with his fore-feet and head—he certainly stands at the head of the list of "Animal pets that would do." Evidently the "Younger, more go-ahead nation," Mr. Punch, has not only "beaten you badly of late," but beat you badly nearly a year ago by heading the list of "animal pets that would do" with the king of beasts.

Middleweight Match Race.

A match race between Major C. J. S. Miller's 30-horsepower Renault car, driven by Joseph Tracy, and 40-horsepower Decauville, handled by Guy Vaughn, is to be run off at the Lakewood, N. J., race meet which will be held April 25-29, Alfred Reeves, of New York, having arranged the contest. The match will be at either five or ten miles, the exact distance not having been decided upon. The stretch of road that will be used is five miles long; if a ten-mile match is decided upon it will be necessary for the cars to turn at the end of the stretch and go back over the same course to complete the distance. As the turn is a dangerous one to negotiate at high speeds, it is likely that a control will be established in case the longer distance is selected.

The Renault car, driven by Joseph Tracy, established the world's record for middleweight machines for ten miles at the Empire Track, Yonkers, N. Y., on September 24, 1904, covering the distance in 10: 01 2-5. The Decauville car, under the guidance of Carl Paige, has won many races; it is a car noted for its remarkable regularity of running. Both cars were entered and driven in the great Paris-Madrid road race held in 1903.

The same cars will again be matched in a race to be run at the opening of the Morris Park track, New York, on May 20 next. The Decauville will again be driven by Guy Vaughn; but Mr. Tracy will not drive

the Renault, he having announced his intention of participating only in road races in the future.

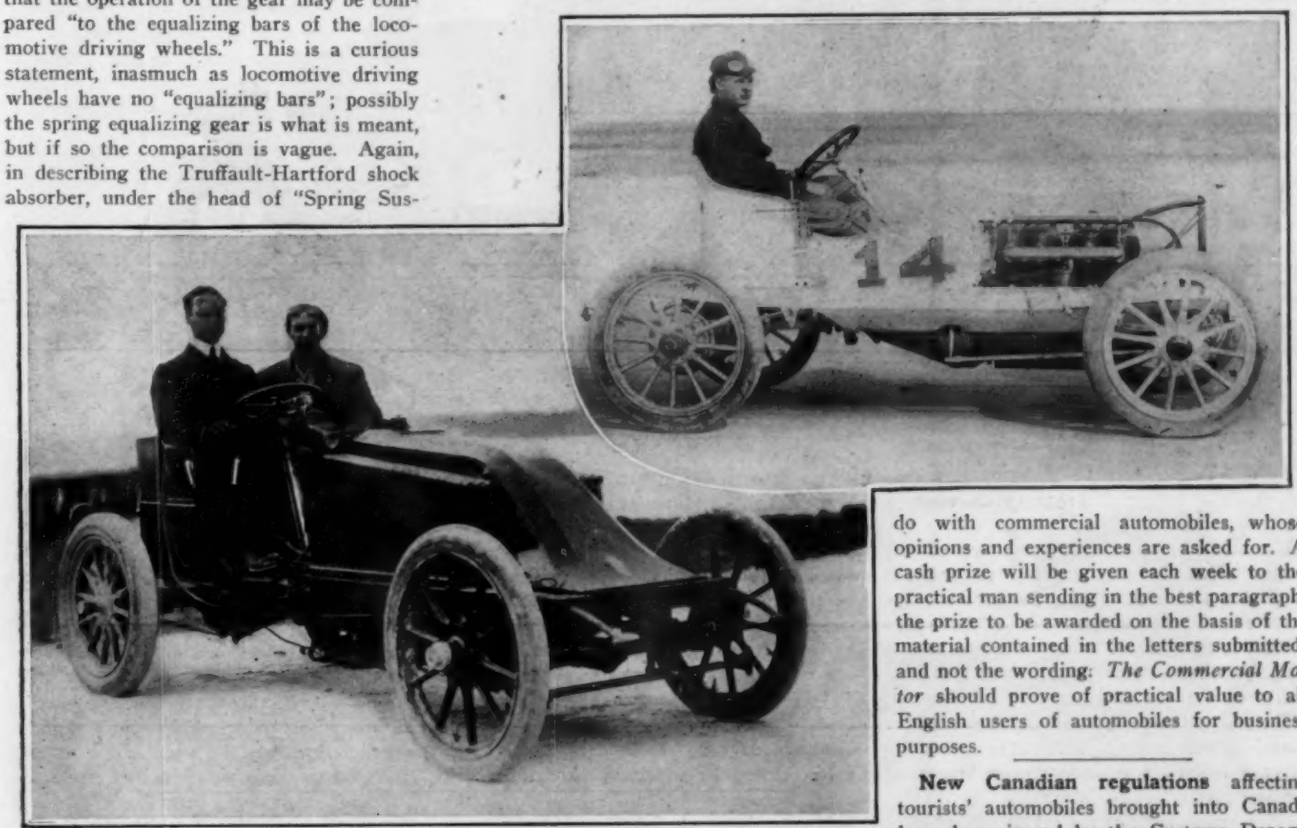
AUTOIST'S HAND BOOK.

There are many prospective owners of automobiles, to say nothing of a goodly number who are actually owners of cars, who know little or nothing of the details of the machinery hidden in the bodies of motor-propelled vehicles, and to whom a book of convenient size, containing condensed information concerning the parts and their functions would be of value.

Elliott Brookes has brought out through Frederick J. Drake & Co., publishers, of Chicago, Brookes' Automobile Hand Book, which is intended to fill this need. The various details which go to make up a complete automobile are described and their functions explained; the book is so arranged that no index is necessary, the subjects being arranged in alphabetical order, as in a cyclopedia. While the information given is, as a rule, correct and covers the subject fairly well, there are a few exceptions which might be misleading to the novice. For instance, in describing the operation of the differential gear, the author states that the operation of the gear may be compared "to the equalizing bars of the locomotive driving wheels." This is a curious statement, inasmuch as locomotive driving wheels have no "equalizing bars"; possibly the spring equalizing gear is what is meant, but if so the comparison is vague. Again, in describing the Truffault-Hartford shock absorber, under the head of "Spring Suspension," that well-known device is credited with having "a flat coiled spring attached to arms or links," evincing a surprising unfamiliarity, in one writing for automobilists, with the appliance, which has no spring but prevents the bouncing of the car by friction alone. The beginner is advised when filling his water tank, to leave the drain-cock open for the first few minutes for the escape of air bubbles which might get into the circulating system and cause an air lock; but no method is described for causing the air bubbles to overcome the laws of nature and pass downward through the water. There is, however, much in the book that will be found useful, especially concerning electrical matters, with which the author seems much more familiar than with matters concerning gasoline automobiles. The book is illustrated with line drawings and diagrams; contains a considerable amount of mathematical data; and is of convenient size for reference.

BERLIN SHOW FIGURES.

The fourth international automobile exhibition at Berlin furnished some interesting facts with regard to the increasing magnitude of the industry. At the 1903 exposition there were 115 exhibitors; in 1905 there were 298 exhibitors showing 320 exhibits. German firms exhibited to the number of 270, of which 112 were located in and near Berlin. France was represented by 13 exhibitors, Austria-Hungary by 5, Great Britain by 3, and Switzerland by 3. American electric automobiles, power boats, marine motors and automatic machinery, the latter shown in actual operation, were exhibited by German firms and attracted much attention, especially the machinery, which was constantly surrounded by crowds watching with the greatest interest the automatic turning out of accurately finished automobile parts.



FAST MIDDLEWEIGHT CARS FOR WHICH A MATCH RACE HAS BEEN ARRANGED.
Joseph Tracy at Wheel of 30-H.P. Renault on Left, and Guy Vaughan in 40-H.P. Decauville on Right.

The initial issue of *The Commercial Motor*, an English weekly publication devoted, as its name indicates, to the automobile in its commercial forms, has appeared. The field of commercial automobiles has not, heretofore, had an organ of its own, and the new paper therefore seems to fill the traditional "long felt want." The scope of the new paper is well indicated by the contents of No. 1, Vol. I; it contains a particularly interesting article on self-propelled fire engines using steam and gasoline motors; one in which the advantages of the light automobile delivery van over the horse-drawn delivery wagon are discussed; some interesting and valuable information regarding the use of automobile delivery vans in Paris; and a variety of articles concerning business automobiles of various types and for various classes of service. A special feature will be made of a column which will be set apart for the use of drivers and other practical men who have to do with commercial automobiles, whose opinions and experiences are asked for. A cash prize will be given each week to the practical man sending in the best paragraph, the prize to be awarded on the basis of the material contained in the letters submitted, and not the wording. *The Commercial Motor* should prove of practical value to all English users of automobiles for business purposes.

New Canadian regulations affecting tourists' automobiles brought into Canada have been issued by the Customs Department at Ottawa. Under these regulations an automobile brought in free of duty for touring purposes may remain in Canada three months. A deposit of $25 is required from each owner, which sum will be refunded on proof of exportation of the car. A machine brought in under the new regulations is not to be used for gain or hire.

Stoddard-Dayton Four-Cylinder Touring Car.

THE Stoddard-Dayton touring car described and illustrated herewith, is a Western machine which made its début at the Chicago show; an output of the shops of the Dayton Motor Car Co., of Dayton, O. It is of the standard side-entrance touring type, with 25-horsepower vertical motor under a modified Mercedes bonnet in front, and has an amount of power in proportion to its weight—25 horsepower to 1,800 pounds—that should prove capable of negotiating any road conditions likely to be encountered by the tourist. The design follows largely the modern French methods, and the construction is substantial, free from freaks, and has some points of novelty and interest.

The frame is built in a workmanlike and substantial manner of 10-gauge hot-rolled steel containing, according to the makers, a greater proportion of carbon than is usual in frames. The side frames are of the usual channel form, tapered toward the ends, to which the spring hangers are hot riveted. These hangers are a distinctive feature; they are of manganese bronze and highly polished, giving a touch of individuality to the car when at rest or running. The end cross members of the frame are of semi-hollow section with the open side facing inward and large corner braces or gusset plates formed integral.

Somewhat back of the center of the main frame is a heavy cross member, and from this to the front cross member two pressed steel subframes extend, running parallel to and four or five inches from the main frames. On this inner frame hang the motor and the transmission gear case, which are secured by the customary arms cast on the casings. Pressed steel of 10-gauge, the same thickness as in the main frames, is the material of which the cross frames and subframes are made. Sheet metal filling pieces are placed between the longitudinal subframes and the main side frames.

The front ends of the semi-elliptic rear springs are connected by a steel rod which passes through long bearings hot riveted to the frames; the usual links, with manganese bronze through-bolts, are used on the rear ends. The rear springs are 40 inches long and have five leaves each, the front springs being 38 inches long with five leaves each, and semi-elliptic also.

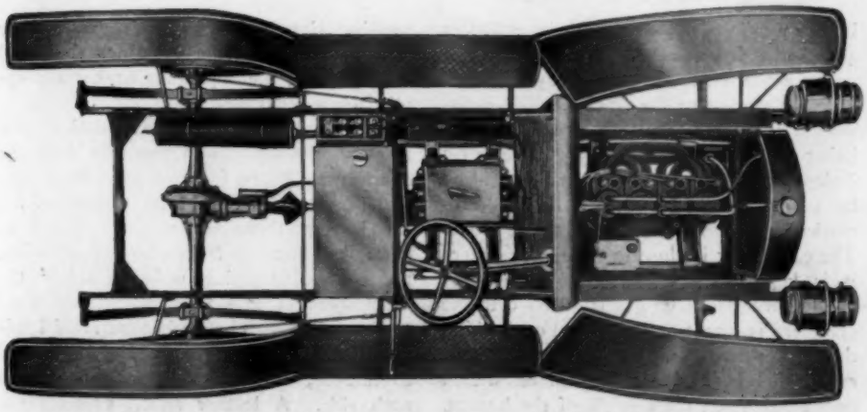
A four-cylinder vertical Rutenber motor furnishes the power to drive the car; it has cylinders of 4 inches bore and 4 inches stroke; the valves, mechanically operated, are 1 3-4 inches in diameter, with high lift; the compression is given as 85 pounds and the motor is rated at 25-horsepower at 1,200 revolutions a minute. Cylinders are cast separately with integral heads and water jackets, the latter extending around the valve housings. Each cylinder has an inlet and exhaust valve located on the same side and in the same housing, side by side, and access to the valves is obtained through openings in the housings, one over each valve, closed by bronze plugs; the spark plugs are screwed into the plugs over the exhaust valves. A Schebler carbureter vaporizes the fuel. Circulation of the jacket water is maintained by a sliding-vane pump gear driven from the crankshaft. Cooled water is pumped into the tops of the cylinder jackets, a brass pipe extending along the top of the motor being connected with each jacket by means of short sections of brass tubing brazed on the main pipe and secured to the jacket by flanges; the hot water is carried off by a similar arrangement of piping, running parallel to the other and discharging into the top of the radiator. Gilled tubing is used for the radiator, and a large fan, driven by a round belt from the crankshaft, maintains a rapid flow of air through the cooler.

Jump spark ignition is fitted, current being supplied by storage batteries placed in a box under the front seat, where they are readily reached for inspection or charging. There are two sets of batteries of fifty ampere hours each, so wired that they can be used singly or together, as may be required, a multiple switch being arranged with the necessary contacts. The ignition timer and distributer is placed on the end of a vertical spindle driven by spiral gearing from the camshaft, and is automatically advanced or retarded as the throttle is opened or closed. The timer, which is of the Lacoste type, is placed just in front of the dash, a little to the left of the center line of the motor. A quadruple coil is placed in the semi-hollow steel dash, the coils being of the individually removable type with connections which make contact automatically when the coils are pushed into their places.

The motor crankshaft has five bearings bushed with bronze. Each crank works in a compartment of its own, and each compartment is supplied with oil by a Hill Precision oiler which is ratchet driven from the vertical spindle on which the timer is mounted. Each of the main bearings of the crankshaft is lubricated by a feed from the oiler; all the feeds pass through sight glasses on the dash, and each can be independently adjusted to feed the proper amount of oil.

The leather-faced cone clutch is of the type in which the thrust is self-contained

STODDARD-DAYTON 25 H.P. TOURING CAR FROM REAR QUARTER, SHOWING GOOD BODY LINES.



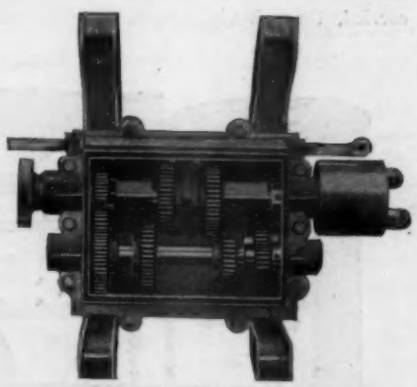
CHASSIS OF THE STODDARD-DAYTON CAR FITTED WITH RUNNING BOARD AND MUD GUARDS.

when the clutch is engaged. The short shaft between the clutch and transmission gear case is fitted with a universal joint to obviate twisting strains on the bearings. The transmission gear, of the sliding type giving three forward speeds and reverse with direct drive on the high gear, is illustrated herewith with the cover removed; the gears are shown in neutral position. A shifting fork, moved by the square bar, the ends of which are seen projecting from the ends of the case at the top of the engraving, moves the pair of sliding gears on the square steel shaft. Moved to the right until the largest gear of the sliding pair engages with the pinion seen nearest to it on the secondary shaft, the slowest speed forward is engaged; moved still further to the right, the large sliding gear engages with the pinion which runs on a stud below the secondary shaft which it drives through a similar pinion, giving a slow reverse. Moved to the left of the position shown in the engraving, the intermediate speed is first engaged. By continuing the motion in the same direction the claw clutch is engaged, giving the highest speed, with the drive direct through the main shaft, the secondary shaft running idle. All the gears have their teeth machine chamfered to facilitate their engagement, and are case-hardened; gear faces are 1 1-8 inches wide. The journals of the gear shafts are case-hardened and run in bronze bearings in which large oil-retaining pockets are formed.

The cover on top of the gear box exposes the entire gear when removed, and is not a mere hand-hole. A handle in the center of the cover operates the latches by which the cover is retained in its place, and a catch prevents the handle from jarring open. By releasing the handle catch and turning the handle less than a quarter of a revolution the cover is at once removable, the time required being only two or three seconds.

A brake drum having a large superficial area is secured to the shaft at the rear of the gear case, and one member of a universal joint is formed integral with the drum, the other member being on the forward end of the propeller shaft, through which the live rear axle is driven by bevel gears. Leather "boots," or casings, enclose the universal joints, and, being filled with grease, keep the joints well lubricated, as well as protected from dust and dirt.

Steel castings are used for the casing of the bevel gears and differential, the casing being divided into halves horizontally; the



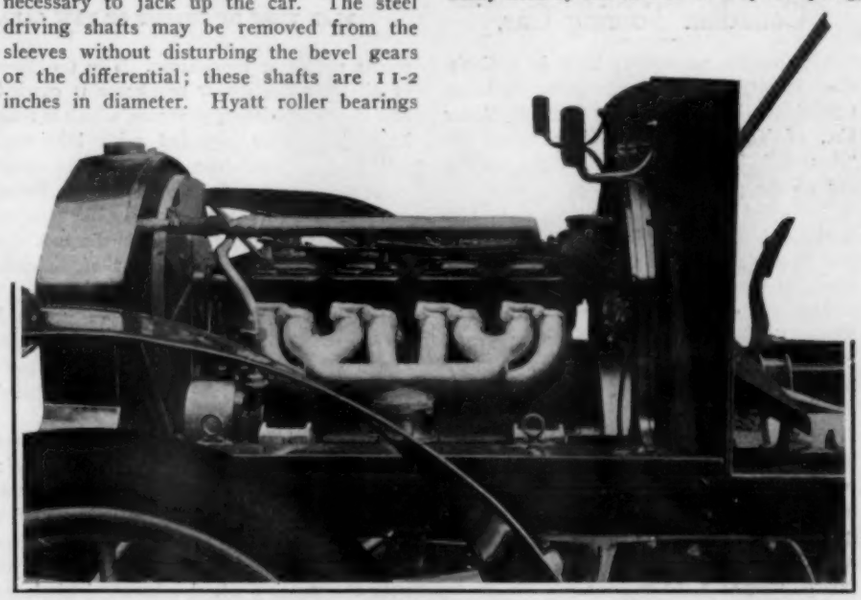
SLIDING GEAR CASE WITH COVER REMOVED.

axle sleeves are of the same metal, well ribbed at the center. Bevel gears and differential can be inspected by removing the top half of the casing, to do which it is not necessary to jack up the car. The steel driving shafts may be removed from the sleeves without disturbing the bevel gears or the differential; these shafts are 1 1-2 inches in diameter. Hyatt roller bearings are used on the rear axle, there being four sets, two on each side.

The manufacturers state that the rear axle before being placed on the car is assembled and run in a vertical drill-press for eight or ten hours in order to work the bearings down to a good seating and to bring out any defects that may not appear to the eye.

An interesting and novel method of construction is adopted for the front axle. This member is of heavy I-beam section. The steering yokes are formed by upsetting the metal at the axle ends and forging the arms to the desired form, making the axle and the two yokes of a single piece. In order that there may be no doubt as to the strength of the ends, re-enforcements of Norway iron are welded on at the roots of the yokes, thickening the axle where great strength is required. The steering knuckles are of steel forgings, and the spindles turn in closely-fitted bronze bushings. A steel tie-rod of square section connects the arms of the knuckles in front of the axle. Large ball bearings are used on the front wheel hubs. All wheels are 32 inches in diameter, of wood, and have 3 1-2 inch tires.

The control of the car is ingeniously worked out and is decidedly simple and convenient. Gears are shifted by a lever placed just under the steering wheel, a projecting pin on the lever fitting into holes in a sector over which the lever moves, a hole being provided for each gear position. A spring holds the lever down, and in shifting gears the lever may be raised clear of the catch until the pin rests on the sector; by allowing the pin to slide along the sector as the lever is moved, the pin will drop into the next hole without giving the driver the trouble of feeling for the proper position and without danger of overrunning the notch. A pedal, operated by the right foot, has a double function. When the pedal is in its extreme backward position, where it is normally held by the tension of a spiral spring,



FRONT END OF STODDARD-DAYTON CAR WITH BONNET REMOVED SHOWING RUTENBER MOTOR.

the clutch is engaged and the gears are locked so that they cannot be shifted. By moving the pedal forward slightly the clutch is withdrawn and the gears unlocked so that they can be shifted. When the pedal is pushed forward to the limit of its travel the brake on the shaft at the rear of the gear case is applied, the clutch still being held out of engagement. The emergency brakes, consisting of expanding rings in drums on the rear hubs, are operated by a lever at the side of the driver's seat, where it is not in the way of the driver when entering the car. A forward motion of this lever sets the brake, and the usual notched sector and spring dog are provided for retaining it in any desired position. The emergency brake interlocks with the clutch, so that the motor is disconnected when either brake is applied. A foot-operated accelerator is provided, while the throttle and ignition timer are regulated together by a small lever on the steering-wheel column.

The side-entrance body has individual front seats and roomy, high-backed rear seat; fenders are of good size, and between the front and rear fenders extend rubber-covered running boards. A large compartment for stowage is reached through a door opening into the space under the rear seat from the rear of the body. Under the front seat is placed the rectangular gasoline tank of 14 gallons capacity.

The standard finish of the machine is pearl gray; but for the Eastern market a dark blue finish is adopted, with cream-colored running gear. Brass mouldings and other trimmings, together with the polished bronze spring hangers and bolts combine to make an attractive looking car. Seats are upholstered in hand-buffed or enameled black leather, according to the taste of the purchaser. Wheelbase is 96 inches and tread standard; the weight of the car is about 1,800 pounds in running order.

Canadian Touring Car.

A Canadian automobile built in a Canadian factory for Canadian users is being turned out by the Canada Cycle & Motor Co., of Toronto, Ont., and is called the "Russell." The machine is a light touring car of the popular side entrance type and is propelled by a double opposed cylinder horizontal motor; it is substantially built and is designed with a view to use on all kinds of roads.

The frame is of angle steel with wood filling, the corners braced by heavy gusset plates and the two intermediate cross members riveted to the side frames. Spring suspension is of the three-point type, the front end of the frame resting on a single semi-elliptic transverse spring and the rear on two full elliptics. Wood artillery wheels are fitted and are 30 inches in diameter with 3 1-2 inch tires. The wheelbase is 90 inches, and the complete car, with all supplies on board, weighs 1,450 pounds.

The double opposed cylinder motor, which is rated at 12-14-horsepower at 1,000 revolutions a minute, is placed with its cylinders across the frame at the front of the car under a bonnet, the cylinders supported on brackets riveted to the frames. The cylinders are of larger bore than stroke, the bore being 4 3-4 inches and the stroke 4 1-2 inches. In operation the motor is said to be efficient and smooth running. Automatically operated inlet valves are fitted. The carbureter is close to the motor, where it is kept warm while running, and the piping through which gas is supplied to the cylinders is direct and short. For flushing the carbureter when starting the motor a rubber bulb is provided, and is placed within easy reach from the outside of the bonnet. Each cylinder exhausts into a separate exhaust pipe, the two pipes running along the sides of the car and discharging into the ends of the muffler, which is hung transversely from the rear cross member of the frame. On the top of the crankcase, of which it forms a part, is a reservoir for lubricating oil, and from this the oil is carried, through sight-feeds, to the main points requiring lubrication. The overflow of oil from the motor crankcase is carried into the transmission gearcase, which is thus kept thoroughly supplied with lubricant.

A leather-faced cone clutch of the usual type works into the flywheel, the latter being cast with vane-shaped spokes so as to assist the circulation of air through the radiator. From the clutch the shaft extends rearwardly into the case of the sliding gear transmission, which gives three forward speeds, with direct drive on the high gear, and a slow reverse. Drive from the gear shaft is through propeller shaft and bevel gears to the live rear axle.

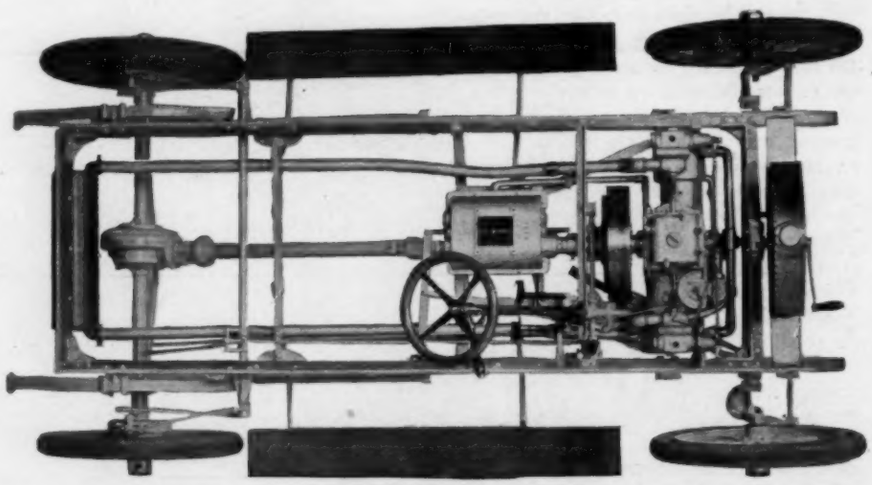
Transmission gears are shifted by means of a lever just under the steering wheel; throttle and ignition levers are also on the column. The braking system consists of a pair of contracting band-brakes on drums on the rear hubs, operated by a lever placed near the steering wheel column. This lever interlocks with the clutch, disengaging it when the brake is applied. Internal expanding ring brakes are fitted within the drums on the outside of which the band brakes work; the expanding brakes are applied by a pedal.

Individual front seats are fitted to the side-entrance body, and the rear seat has comfortable room for two passengers and will accommodate three. A feature of the car is that there are no side levers to obstruct entrance from the driver's side, the gear-shifting levers being under the steering-wheel and the brake lever close to the column. The dashboard is of laminated wood; mud guards are large and continuous, forming a running-board on each side. A leather apron protects the engine from flying dust, mud and water, and is easily removable. The body is finished in ultramarine blue with light colored running gear and black leather upholstering.

Toledo Motor Truck.

Special Correspondence.

TOLEDO, April 3.—Several public demonstrations of the motor truck shown in the accompanying photograph have been given in Toledo during the past week. The truck has just been completed by the recently organized American Motor Truck Company. The trials were very satisfactory, loads as large as could be placed on the truck being hauled through mud in which the wheels sank almost to the hubs.

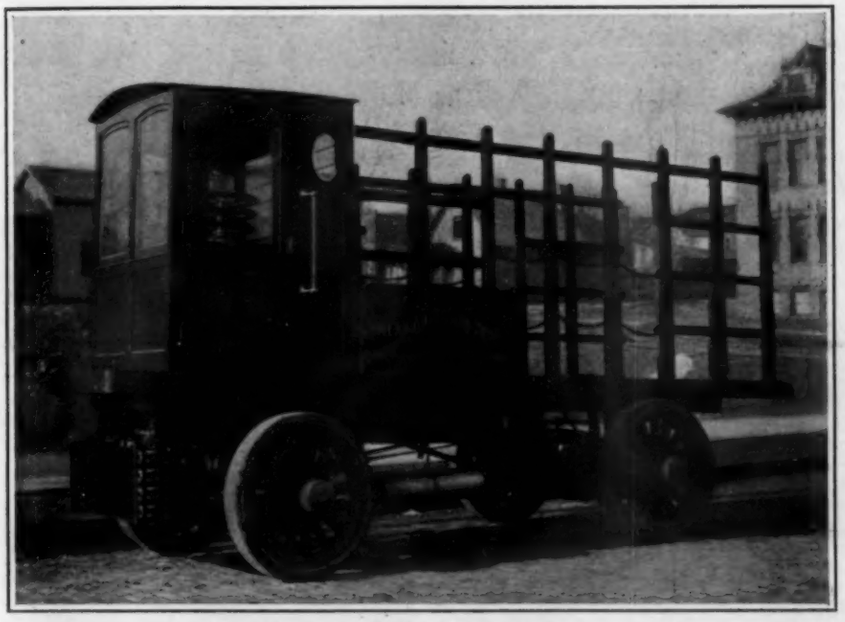


PLAN VIEW OF CHASSIS OF NEW CANADIAN TOURING CAR NAMED THE RUSSELL.

The truck has friction drive, but is built after original designs incorporated in letters patent for which application has been made. Until these are granted the manufacturers decline to give information as to the details of construction.

The truck, of which only one size is being made at the present time, has a capacity of from five to six tons, and is speeded up to eight miles an hour. Plans are being perfected, however, for the building of three-ton wagons also.

The American Motor Truck Company, which was formerly known as the Snell Motor Car and Truck Company, is capitalized at $125,000, and occupies a factory in



FRICTION DRIVE FREIGHT TRUCK BUILT BY AMERICAN MOTOR TRUCK CO. OF TOLEDO.

this city. As soon as its patents are allowed it expects to begin the manufacture of these trucks on a large scale.

Orient Change Speed Gear.

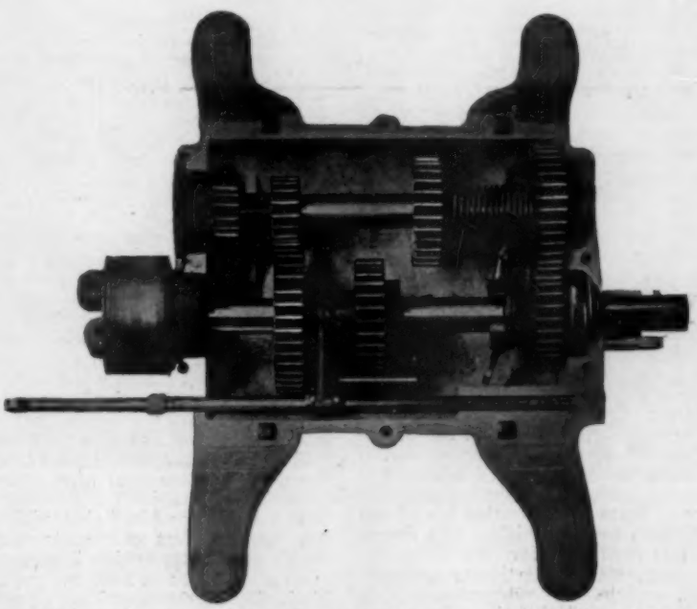
The sliding gear transmission used in the 1905 Orient cars, made by the Waltham Manufacturing Company, of Waltham, Mass., is a good example of its kind, giving three forward speeds and reverse, and driving direct on the high speed, while the countershaft does not revolve, all its gears being out of mesh with those on the main shaft. The motor drives through the short squared shaft shown in the engraving on the right, to which the pinion just inside the gearcase is keyed. This shaft telescopes into the shaft which enters the case from the opposite side. Thus the opposite ends of the main shaft are capable of being rotated at different speeds simultaneously, or in opposite directions, according to the position of the gears. The coupling at the left is secured to the outer of the telescoping shafts, and the gears mounted on this shaft may be slid lengthwise by means of the rod projecting from the left of the case and the fork which engages in a grooved collar between the two sliding gears, which, being mounted on a common hub, move together.

In the position shown in the engraving, the gears would be driving the car at the slowest forward speed, the drive being from the pinion on the motor-driven shaft to the gear on the countershaft, and from the pinion on the countershaft to the largest gear on the main shaft, giving a double reduction and causing the coupling to rotate much more slowly than the motor shaft.

At the extreme left of the countershaft is the reverse pinion; just under it and meshing with it, but not visible in the engraving, is another gear, mounted on a steel stud, which meshes with the large gear when the latter is slid to the extreme left and reverses the direction of rotation of the driving pinion at the axle, moving the car backward. Owing to the small size of the reverse pinion, the backward movement is considerably slower than even the slowest speed forward.

When the two sliding gears are shifted to the right of the position shown in the engraving, the engaging gears are first separated and the right-hand shifting gear slides into engagement with the next larger gear on the countershaft, giving the second forward speed. To throw in the top speed, the gears are shifted still further to the right, when, first, the intermediate gears are separated; second, the gear on the extreme right of the countershaft is made to slide to the left, out of engagement with the driving pinion, so that the countershaft stops turning (this is accomplished through a lever which passes under the main shaft and is pushed by a projection on the shifting rod); and, third, the jaws of the coupling on the driving pinion engage with a corresponding set of jaws on the shifting gear nearest to it, so that the entire main shaft revolves as if made in one piece, and no gears are in mesh. On moving the gears back into the second speed, the helical spring between the countershaft gears causes the movable one to return to its engagement with the driving pinion on the main shaft.

The shafts run in adjustable ball bearings, and the case is made tight and filled with lubricant, in the usual way.



CHANGE SPEED GEAR BOX OF ORIENT AIR COOLED CARS WITH UPPER HALF REMOVED.

STREET CAR SUBSTITUTE.

Autos to Replace Car Service Temporarily in Chicago.

Special Correspondence.

CHICAGO, April 3.—The right to operate automobiles in place of street cars, was granted the Chicago General Electric Railway Company by the city council of Chicago at its last meeting. This company's tracks extend from Wabash avenue, west on Twenty-second street, beyond the city's limits at 46th avenue. The service will commence at once.

The change will be in the nature of an experiment. Two miles west of Wabash avenue the car tracks cross the south branch of the Chicago river. This structure is being rebuilt. Until the work is completed the automobile service will take the place of the trolley car service.

The railroad company has no downtown connection, and transfers are neither given nor accepted on its lines. The road has been handicapped on account of this condition.

Text of the New Jersey Law.

Measure Amending Scovel Act of 1903, Which Now Awaits Signature by Governor, Authorizes Arrests Without Warrants.

THE substitute measure for the bill to amend the Scovel automobile law in New Jersey was passed by the legislature, at Trenton, just before it adjourned last Thursday. The act now awaits signature by Governor Stokes before it goes into effect June 1. It is a compromise between the automobilists of the state and the opposition, but the principal feature of the Scovel amendment which it takes the place of is retained, the measure empowering policemen and constables to make arrests of violators of the provisions of the law without the necessity of swearing out warrants. The text of the act is given below.

Several bills died in committee. Two of these were introduced by Assemblyman Gibbs, of Camden, one making it a misdemeanor to operate on the public highways any automobile capable of a speed of more than twenty miles an hour which was not equipped with a governor to render speed in excess of this rate impossible; and the other requiring the licensing of all chauffeurs and forbidding persons under sixteen years of age from operating automobiles.

The bill prepared along the lines suggested by James B. Dill, making it a misdemeanor for chauffeurs to take out and drive automobiles without the knowledge and consent of the owners was killed, and the senate killed the measure, which was passed by the house, authorizing the holding of races on the road under the direction of township committees.

TEXT OF THE LAW.

A SUPPLEMENT to an act entitled "An act defining motor vehicles and providing for the registration of the same and uniform rules regulating the use and speed thereof," approved March twenty-third, one thousand nine hundred and three.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. Section two of the act entitled "An act defining motor vehicles and providing for the registration of the same and uniform rules regulating the use and speed thereof," is hereby amended so as to read as follows:

2. Every resident of this State who is the owner of a motor vehicle, and every non-resident owner whose motor vehicle shall be driven in this State, shall file in the office of the Secretary of State a declaration duly verified that such owner is competent to drive the motor vehicle for which application for license is made, and a written statement containing the name and address of such owner, together with a brief description of the character of such motor vehicle, including the name of the maker and the manufacturer's number of the motor vehicle, if number there be, and the rated horsepower of the motor vehicle, and shall pay to the Secretary of State a registration fee of one dollar for each motor vehicle. The Secretary of State shall issue for each motor vehicle so registered a certificate properly numbered, stating that such motor vehicle is registered in accordance with this section, and shall cause the name of such owner, with his address, the number of his certificate and a description of such motor vehicle or motor vehicles, to be entered in alphabetical order of the owners' names, in a book to be kept for such purpose. Upon any and every transfer of said motor vehicle by the owner thereof in whose name the same is registered the said registration and certificate thereof shall forthwith be and become void, and the holder of said registration certificate shall return the same to the Secretary of State for cancellation, and the purchaser thereof shall thereupon, in conformity with the provisions of this section, register the said motor vehicle anew and procure a certificate, as hereinbefore set forth. Every manufacturer of or dealer in automobiles instead of registering each automobile owned or controlled by him may make application, as hereinbefore provided in this section, for a registry number, and the written statement in addition to the matters hereinbefore contained, shall state that he is a manufacturer or dealer, as the case may be, and that he desires to use a single number for all machines owned or controlled by him; and thereupon the Secretary of State, if satisfied of the fact stated in said application, shall issue a certificate, as hereinbefore set forth, assigning the same a number as hereinbefore set forth, which certificate shall contain the statement that the same is issued to the applicant as a manufacturer or dealer, as the case may be, and that one certificate shall cover and be valid for all automobiles owned or controlled by such manufacturer or dealer until sold or let for hire, or loaned for a period of more than five successive days, and all such automobiles shall be regarded as registered under such general number, provided and if, in addition to the registration number displayed on the front and back of the car, as hereinafter provided, there shall be added the letter M of equal size and prominence. The fee for every such manufacturer's or dealer's license shall be ten dollars.

2. Section three of the said act shall be amended so as to read as follows:

3. The owner of each and every motor vehicle driving the same upon the public streets, public roads, turnpikes, parks, public parkways, public driveways or other public highways in this State shall have the number of the license issued as aforesaid by the Secretary of State, upon both the front and back of every such motor vehicle, in a conspicuous place, so as to be plainly visible at all times during daylight, such numbers to be separate Arabic numerals, not less than four inches in height, and the strokes to be of a width not less than one-half of an inch, and there shall not be placed upon the front or rear of said vehicles any other numbers similar in size or general appearance, which shall conceal or confuse the identity of the registration number of said motor vehicle.

3. Section four of said act shall be amended to read as follows:

4. Every motor vehicle shall carry, during the period of one hour after sunset to one hour before sunrise, at least two lighted lamps, showing white lights, visible at least two hundred feet in the direction toward which such motor vehicle is proceeding, and shall also exhibit at least one red light visible in the reverse direction. Upon the sides or front of the two aforesaid lamps showing white lights shall be displayed, when said lamps are lighted, in such manner as to be plainly visible, the number of the license issued as aforesaid by the Secretary of State, the same to be in separate Arabic numerals, not less than one inch in height. Every motor vehicle shall also be provided with good and efficient brake or brakes, and shall also be provided with suitable bell, horn or other signal device.

4. Section five of said act shall be amended to read as follows:

5. A rate of speed of one mile in three minutes may be maintained, but upon any public street, public road, or turnpike, public park or parkway, public driveway or public highway, in this State, the said rate of speed shall not be exceeded by anyone driving a motor vehicle; *provided, however,* that nothing in this section contained shall permit any person to drive a motor vehicle at any speed greater than is reasonable, having regard to the traffic and use of highways, or so as to endanger the life or limb or to injure the property of any person; and it is further provided, that nothing in this section contained shall affect the right of any person injured either in his person or property by the negligent operation of a motor vehicle to sue and recover damages as heretofore.

5. Section eight of said act shall be amended to read as follows:

8. Any person driving a motor vehicle the owner of which shall not have complied with the provisions of this act, and which motor vehicle shall display a fictitious number, the same being a number other than that designated for such motor vehicle by the Secretary of State, shall, upon conviction, be fined in a sum not exceeding one hundred dollars, and, in default of payment thereof, be punished by imprisonment in the county jail for a period not exceeding thirty days.

6. Section nine of said act shall be amended to read as follows:

9. Any person driving a motor vehicle upon any public streets, public highways, public roads, turnpikes, parks, public parkways or public driveways in this State (1) in a race or on a bet or wager; (2) or to make a public speed record exceeding the rate of one mile in three minutes; (3) or any person driving a motor vehicle thereon who shall in violation of the provisions of section six of this act, pass from either direction a person riding or driving a horse or horses at a speed greater than one mile in three minutes; (4) or who shall drive a motor vehicle thereon at a speed greater than one mile in two minutes, shall, upon conviction, be fined in a sum not exceeding one hundred dollars, or may, in the discretion of the magistrate if the violation be willful, be imprisoned in the county jail for a period not exceeding ten days; *provided, however,* that no conviction or imprisonment shall be had, under the provisions of this act, upon the uncorroborated testimony of a constable or police officer, and provided that nothing in this section contained shall authorize a speed greater than that provided in section five.

7. Section eleven of said act shall be amended to read as follows:

11. Any constable or police officer is hereby authorized to arrest, without warrant, any person driving a motor vehicle contrary to the ninth section of this act, and to bring the person so offending before the nearest magistrate of the county where such offense is committed. The person so offending shall be detained in the office of such magistrate until the officer making such arrest shall make oath or affirmation, which he shall do forthwith, as provided in section ten of this act, whereupon such magistrate shall issue a warrant returnable forthwith. The said magistrate shall proceed to hear and determine said complaint and give judgment or adjourn the hearing of said complaint as

provided by sections ten and twelve of this act. Any constable or police officer is hereby authorized to stop on signal but not to arrest without warrant except as in this section expressly provided, any person driving a motor vehicle in violation of any of the provisions of this act, and to require the name and address of the said person driving said motor vehicle and the registered number thereof; *provided, however,* said officer shall forthwith and upon the request of the person so stopped exhibit his official badge or other written evidence of his appointment and authority as such person. If the information hereinbefore provided for shall be given to the said officer then the said person driving such motor vehicle shall not be detained, but if, after the constable or police officer shall show his authority, such person driving a motor vehicle shall willfully refuse to give such information to the constable or police officer, thereupon the said constable or police officer is authorized without a warrant to arrest said person driving said motor vehicle and forthwith to bring the person so offending before the nearest magistrate where such offense is committed, as hereinbefore provided in this section.

8. Section seventeen of said act shall be amended to read as follows:

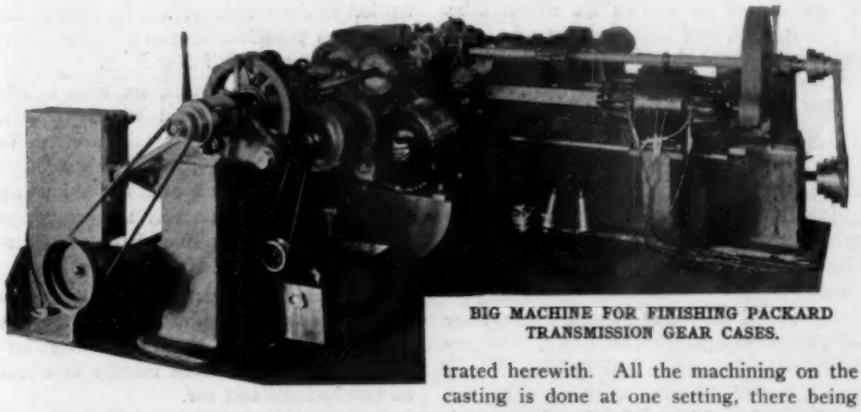
17. Any person violating the provisions of this act shall, except as otherwise provided herein, upon conviction, be fined in a sum not exceeding the amounts hereinafter set forth; for a violation of section two, fifty dollars; for a violation of section three, fifteen dollars, if the violation be willful, fifty dollars; for a violation of section four, ten dollars; for a violation of section five, fifty dollars; for a violation of section six, fifty dollars; in default in the payment of any such fine there shall be imposed an imprisonment in the county jail for a period not exceeding ten days; *provided,* that any offender who shall have been found guilty of a violation of this act and sentenced therefor, and who shall be convicted of a second offense of the same violation, may for such second offense be fined in double the amount herein prescribed for the first offense, and may, in default of the payment thereof, be punished by imprisonment in the county jail for a period not exceeding ten days; *and further provided,* that any offender who shall have been found guilty of a violation of section five thereof and sentenced therefor, and who shall be convicted of a second violation of the same section may, in the discretion of the magistrate, instead of being fined as prescribed, be punished by imprisonment in the county jail for a period not exceeding ten days.

9. All acts and parts of acts contrary to, or inconsistent with the provisions of this act, are hereby repealed.

10. This act shall take effect on the first day of June, nineteen hundred and five.

Big Finishing Machine.

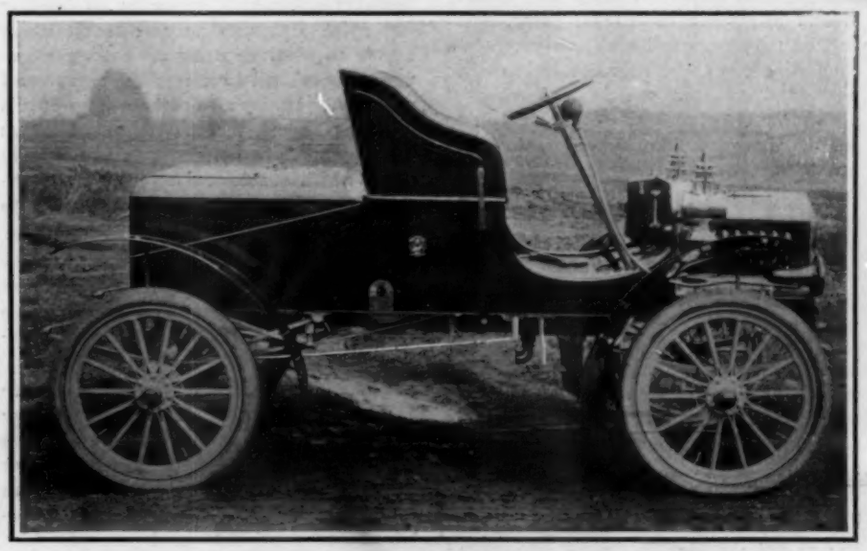
A machine tool designed and built especially for machining the aluminum castings for the bevel driving gears and the transmission gears of the Packard cars, has been installed recently at the Detroit factory of the Packard Motor Car Co., and is illustrated herewith. All the machining on the casting is done at one setting, there being three cutting heads working from three different points at the same time; two electric motors of 10 horsepower each furnish the driving power. This method of machining ensures the alignment of the casting and avoids the loss of time and the possibility of error contingent upon the use of ordinary machines requiring two or more settings of the casting. The machine has overall dimensions of thirteen by sixteen feet.



BIG MACHINE FOR FINISHING PACKARD TRANSMISSION GEAR CASES.

Doctors' Runabout.

The physician's automobile shown in the illustration herewith is a regular Model D Michigan car with the detachable tonneau removed and a special box, with lock and key, attached to the rear deck. The wedge-shaped box on the sloping deck gives the latter a rectangular contour. In other respects the machine does not differ from the regular Model D. It has a double opposed cylinder horizontal motor, rated at 14-16 horsepower at 1,000 revolutions a minute, hung with the cylinders pointing fore and aft and the flywheel under the seat. The wheelbase is 80 inches; the wood artillery wheels are 30 inches in diameter and are shod with 3 1-2-inch tires. The Michigan Automobile Co., Ltd., of Kalamazoo, Mich., state that several Kalamazoo physicians have purchased cars of this type made by it.



MODEL D MICHIGAN CAR ESPECIALLY FITTED FOR PHYSICIANS' USE.

Treatment of Worn Bearings.

Roller bearings in road wheels that have been running for some time are likely to require attention on account of the worn condition of the rollers and of the bushings in which they run. It sometimes happens that the rollers are considerably worn while the bushings show comparatively little wear. In this case the insertion of new sets of rollers will improve the bearing greatly. If, however, the greater part of the wear has come on the bushing, a new bushing will be necessary, or else the old one should be bored out and larger rollers inserted. The owner of a small car recently tried the experiment of replacing the rollers in his bearings with pieces of steel rod of greater diameter than the worn rollers and cut to the right length; but after having expended a lot of time and trouble in getting everything ready he found that the plan would not work because the bushings were worn oval and his new rollers were too tight in some places and too loose in others. If roller bearings cannot be made good by simple means it is often possible to put in a whole new bearing of a slightly larger size. In any case where there is difficulty in deciding what should be done it is advisable to write to the manufacturers of the bearings, who frequently are able to suggest remedies that would not occur to others.

Letter Box

An Alcohol and Water Anti-Freeze.

Editor THE AUTOMOBILE:

[168].—Kindly inform me through the columns of THE AUTOMOBILE if it is safe to use one-third wood alcohol and two-thirds water as an anti-freeze in the cooling system, and if it will do any damage to the copper jacket and pipes?

How low a temperature will it be safe at? Also what percentage of alcohol and water will not freeze at 10 degrees above zero?

Chicago. A. W. M.

Whether or not it is safe to employ alcohol and water for cooling depends upon the way in which the mixture is used. If the liquid is allowed to get very hot, inflammable vapor will be generated which may catch fire. As alcohol evaporates at a lower temperature than water, a quantity of the former will have to be added from time to time to make up for the evaporation losses.

A mixture of alcohol and water will not damage the jackets or pipes. It may, however, attack slightly rubber hose when the latter is used in the piping system. A mixture that will resist freezing at 10 degrees above zero can be made in the proportion of one part of wood alcohol to five parts of pure water.

Wood Alcohol in Cooler.

Editor THE AUTOMOBILE:—

[169].—Some of your readers may be interested in a cooler experience I have had with a light delivery car propelled by a 6-horsepower De Dion motor. The cooling system includes a centrifugal pump, small flanged radiator, small tank and very small connecting pipes which do not drain easily; pipes and radiator contain a number of pockets or traps, making it very difficult to get the water all out. Moreover, the pipes are long, reaching from the back to the front of the car, and being much exposed freeze very easily. I have found that it is not practical to run the motor when the car is standing. I was induced to try a mixture of wood alcohol and water; four quarts of alcohol and ten quarts of water filled the system. After a run of twenty-six miles, however, the mixture was nearly all evaporated and the driver of the car was nearly suffocated by breathing the fumes of the alcohol. Nothing daunted, I filled up again, taking the precaution to carefully cork the filling opening. I wired a piece of rubber tubing on the overflow pipe and brought the end of the tubing close to my foot where I could watch it; the end was closed by a cork not too tightly fitted, so that it could be forced out by a little pressure. The filling opening and the overflow are the only outlets to the circulating system. This arrangement has been entirely satisfactory. I have found it safe to leave the car standing in a cold wind with the thermometer registering fifteen degrees, which is the lowest temperature I have had an opportunity to observe, and I have no doubt the mixture will stand a much lower temperature. On the first trip out I noticed a small loss of the mixture through the overflow, probably due to expansion; once the cork was forced out of the end of the rubber tube. I put it back, and have not since had any trouble. I regard the mixture as a success on my car. E. N. BOWEN.

Buffalo.

Mr. Myers' Rejoinder.

Editor THE AUTOMOBILE:—

[170].—In writing you of my experience with my automobile, I did not do so with the expectation or desire of getting into a magazine controversy.

My article published by you in the issue of THE AUTOMOBILE under date of February 25 gave my experience exactly. I may have lost some of the true auto sport as Mr. Adkins points out (in his letter in the issue of March 25) in not having to contend with numerous repairs and breakdowns on the road, but I am willing to leave these pleasures (?) (as he designates them) to him, and I rather fancy the majority of automobilists will agree with me.

For Mr. Adkins' especial edification, I wish to take this means of confirming in full every line as written by me and published by you.

He writes he is the owner of an automobile of the medium weight, and if he will kindly refer to my article he will perhaps note that I also for a time used a medium weight car and experienced the pleasures (?) of numerous repair bills and breakdowns (with which he seems so familiar and enjoys) to such an extent that I was unable to continue using an automobile in my business until I received the heavy car I now have. It may also perhaps interest this doubting Thomas to know that my business requires barely a half hour of my time in town, which enables me to cover the territory as stated in my letter, not having to wait for transportation by rail.

If Mr. Adkins will use the same kind of a car, I haven't the least doubt but that he will experience a decided change in his views as to what constitutes the real pleasure of automobiling.

While he may think a 4-inch clincher tire a difficult thing to get off and on, I will say here that if he cares to take a trip to Marion I will pay his entire expenses if I cannot demonstrate to him that I can do it with my tires within the time mentioned, otherwise he to pay his own. I can refer him to Apperson Bros., Kokomo, Indiana, who are in the position to testify to the success I have had with one of their machines.

Mr. Adkins' syllogism coupled with his incredulity and the cackle might be interesting to himself, but I believe the majority of the readers of THE AUTOMOBILE would more appreciate information which might be of benefit to them rather than the awkward attempts to be funny by the gentleman from Conn. WILBUR M. MYERS.

Marion, Ind.

Editor THE AUTOMOBILE:—

[171].—Wilbur M. Myers called our attention to the article written by George M. Adkins as published by you in THE AUTOMOBILE, under date of March 25.

In connection with this, we wish to advise that to our personal knowledge Mr. Myers' statements about repairs are true in every particular. In support of this we have taken off the four tires of his machine and find the inner tubes intact with the exception of one small patch on one of the tubes, necessitated on account of a puncture.

As Mr. Myers keeps his car with us, we are in a position to know that there has been occasion for no repairs whatever during the past six or seven months in which he has had his last car.

CUSTER ELECTRIC MFG. CO.,
BURR CUSTER, Mgr.

Marion, Ind.

Winton Testimony.

Editor THE AUTOMOBILE:

[172].—We note that the cost of repairs and maintenance is receiving attention from various correspondents of THE AUTOMOBILE, and it occurs to us that possibly your readers might be interested in reports made to us by two users of Winton cars.

H. P. Dyer, of Cleveland, O., purchased one of our single cylinder runabouts and operated it almost daily for three years at a total repair expense of $22.50. Emil Estbery, of Waukesha, Wis., operated a 1904 Winton 9,700 miles at a cost for repairs of about $44.00.

We presume it will never be possible to secure statistics from a sufficient number of automobile owners to strike an average in the cost of repairs; and we can merely take individual experiences and accept them for what they are worth. So many elements enter into the total of repair expenses that even if we knew the average cost of repairs no one would be certain that his individual expenses would be at, above or below the average. The most careful driver may have misfortunes entailing heavy repair bills; whereas a reckless driver may have an abundance of good fortune to keep him out of the repair shop; but in the long run, the careful driver of a well-built car will have an advantage over the careless man.

WINTON MOTOR CARRIAGE CO.

Cleveland, O.

Another Small Repair Bill.

Editor THE AUTOMOBILE:

[173].—Will you please state for the benefit of George M. Adkins, and others, that I used a four-passenger car for the season of 1904, and the only repair was for a broken

lamp bracket, 60 cents (and that had a flaw in it), the car always going and coming with its own power.

This was my first experience, and that without any instructions except the instruction book furnished with the machine.

WILLIAM S. LITTLE.

Sussex, N. J.

New Hampshire's New Law.

Editor THE AUTOMOBILE:

[174].—Referring to your article of March 23, page 430, there is a digest of our New Hampshire automobile bill, which recently has become a law. We, the Granite State Automobile Club, made a hard fight to get as good a law as we have. Although it is not as favorable in some respects as we could wish, it is "less worse" than those of some of our sister states. Enclosed please find copy of the act as it stands to-day.

There is a slight error in your article, as you will see by referring to sections 2 and 3.

E. H. FOGG,
Secretary-Treasurer.

Manchester, N. H.

The error referred to is apparently the statement that the owner of a car is required to pay $1 each for two license tags, in addition to the registration fee of $3. From a careful reading of the two sections mentioned, it appears that these tags are to be furnished free to private owners of cars upon payment of the $3 fee, but that manufacturers and dealers are required to pay $1 for the pair in addition to a registration fee of $10 for a general registration license covering all automobiles and motorcycles owned or controlled by him until sold, let for hire or loaned for a period of more than five successive days.

A Helpful Suggestion.

Editor THE AUTOMOBILE:

[175].—With reference to letter No. 167 in the issue of THE AUTOMOBILE for March 25 last, I would advise " B. B. B." to unscrew needle valve in the carbureter until the engine will just run when the car is standing, when I think he will find the power about right when under way. It is a good plan to work the needle valve in both directions occasionally, as the motion will dislodge any sediment that may be obstructing the flow of gasoline at the needle point.

R. B.

Phillipsburg, N. J.

A Quick Muddy Run in Ohio.

Editor THE AUTOMOBILE:—

[176].—Speaking of good roads, or rather the lack of good roads, in this portion of the country, the writer had somewhat of an interesting experience last week.

On Friday last, accompanied by four other gentlemen, I started with one of our four-cylinder cars for Clyde, O. I went in a roundabout way, and the total distance covered was fifty-one miles. Part of the way the mud was so deep that the wheels were in ruts to the hubs. At no time had I the slightest trouble with the car, and notwithstanding the fact that there were five people with the necessary luggage and tools, we made good time, arriving in Clyde at 7 P. M. We did not attempt to keep any correct record of the time, but coming home the next day we covered the distance in exactly three hours. This was rather good time, considering the fact that the roads in places were almost impassable.

EZRA E. KIRK.

Toledo, O., March 22.

Associate Membership in A.C.A.

Editor THE AUTOMOBILE:—

[177].—Please advise me of what non-resident membership in the Automobile Club of America consists, and what is the cost of such membership?

J. M. M.

Pasadena, Cal.

Non-resident members in the Automobile Club of America are styled "Associate Members," and for this membership persons are eligible whose place of residence or occupation is distant more than fifty miles from the city hall of New York City. The entrance fee for an associate member is $50, and the annual dues are $25, payable semi-annually, one-half on the first day of November and one-half on the first day of May, each year. The associate membership is unlimited, so that an applicant for admission would not have to go on a waiting list.

Planetary vs. Sliding Gear.

Editor THE AUTOMOBILE:

[178].—Will you kindly say if you think a planetary transmission would be as efficient for a 20-24-horsepower car, weighing about 1,700 pounds, as a sliding gear transmission? I know the planetary gear is much easier to operate and keep in repair. Also please tell me what is wrong with the mixture when frost forms on the air inlet of the carbureter. Is there too much gasoline or too much air in the mixture? The frost referred to formed when the temperature was about sixty-five degrees.

B. H. B.

Southington, Conn.

Planetary transmission is seldom used on a car such as the one you refer to. On the high gear the sliding gear system will not be as efficient as the planetary; but on the lower gears the sliding system will be the more efficient.

The cause of the formation of frost on your carbureter is due to the inadequate supply of heat to the carbureter. Your air supply should be taken from the vicinity of the exhaust pipes or jackets. Do not, however, draw too much hot air through the carbureter, as this would tend to reduce the horsepower of the motor. The reason for this is that there is less weight of air for a given volume of high temperature than in the same volume of a lower temperature. Other conditions remaining the same, the power of a motor is dependent on the weight of mixture drawn into the cylinders and exploded per cycle; consequently a motor running with a hot mixture will give less power than if the mixture were cold. This is only true within certain limits, however.

More Power Needed.

Editor THE AUTOMOBILE:

[179].—I have a four-cylinder four-cycle gasoline motor in a boat built for moderate speed. With the ingition fully advanced and the throttle about quarter open, I get an average of 750 revolutions a minute; but a further opening of the throttle gives very little more power and an increase of only fifteen to twenty-five revolutions a minute. The most careful adjustment of the gasoline needle valve fails to improve matters. Proof that when the throttle is opened wider more vapor is being delivered to the cylinders, is found in the fact that there is a much louder sucking of air at the inlet, and through the exhaust pipes. The valves are in excellent condition and the compression is good; motor runs with remarkable smoothness and perfect regularity, never missing an explosion except for some electrical fault. The exhaust is under water with shield giving a partial vacuum at the end of the exhaust pipe, and the gases have, apparently, a very free outlet.

The carbureter is of the float feed type with non-adjustable air inlet. Is the trouble there? Does the engine get too much or too little air when the throttle is wide open? Would a carbureter with auxiliary air inlet be better? Is my propeller too small, causing the engine to reach the limit of its effective number of revolutions per minute before it has a chance to develop its maximum power? In this case, would the engine be given a chance to develop full power if I used a wheel of greater diameter or coarser pitch so as to drive the boat faster at the same number of revolutions?

I have written to the makers of the engine, but they state that I am getting nearly the maximum rotative speed of the motor and ought to be satisfied; but I feel that I ought to get a great deal more power when I open the throttle wide than when only quarter open. As a constant reader of THE AUTOMOBILE I would much appreciate a discussion of this matter in your columns.

G. W. S.

Brooklyn, N. Y.

When the automobile has undergone a spring cleaning, it may, at first, develop less power than it did the last time it was on the road, though all adjustments are correct and everything in good order. This is likely to be due to the lack of thick oil on the piston and in the rings, permitting a certain amount of leakage of the charge. After running for a time, however, the engine will, if there is nothing really wrong, gradually work up to its normal power.

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Training the Young Idea. A sensible effort in the direction of creating a fair if not favorable public sentiment toward automobiling has been made by the Automobile Club of France, which has prepared a manual on the subject for the use of teachers in the public schools. The intention is that by permission of the educational authorities the teachers will instruct the coming generations in the history and present importance of the movement and also how to act when in localities where automobiles are in use. This educational work could be carried on here to advantage, for it is to the rising generation that we must look for a proper appreciation of the merits and advantages of the new form of transportation rather than to those who are approaching the biblical three score and ten. In fact, it is very doubtful if the rapidly increasing use of automobiles in all parts of the country, and consequently of practical information about automobiles, will educate many who are now living to at least a fair view of automobiling during the remaining term of their sojourn here. If Dr. Osler's chloroforming recommendation is commendable from a purely intellectual point of view, then it is of still greater merit when the incapacity of age to fairly judge any radical change in the accustomed methods of life is taken into consideration. It is unfortunately true that in our generation recognition of the enormous importance of the invention of the automobile will not be as generous as in the lives of those who are now in the playgrounds of the schools. Many who are now living, and who firmly believe they can hold back the tide of automobilism, will have been dead and buried and probably forgotten before that day arrives.

No better work could be done by those who are now bravely struggling for the rights of automobilists than to help along the theoretical education of the generation that will be free from blind prejudice and that will get its practical instruction from observation of everyday life. Automobile clubs, which embrace a wide diversity of callings in their membership, are usually representative and influential in their field of activities, and this education of young America is a good subject for serious consideration.

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Advances in Constructional Refinements. One of the most encouraging features of the automobile industry in the United States at the present day, and one that gives promise of development in the future, is the fact that American automobile manufacturers of the better class of cars—and for that matter, American manufacturers of cars of all classes—are devoting a great deal more attention than formerly to the perfection of the mechanical details of their machines and to the finishing touches in the workshop operations which mean so much in the satisfactory operation and in the enduring qualities of the machine as a whole. These so-called minor improvements are almost invariably invisible to the casual observer, and in many cases are only to be discovered by a close inspection of the dissembled mechanism; nevertheless their importance is all out of proportion to their apparent magnitude.

Among the things that go a long way toward making the gasoline motor what it should be is the proper finishing of the cylinders, pistons and rings. Probably a majority of those persons who read catalogues imagine that when the manufacturer says that these parts are finished by grinding, the very last word has been said. This is far from the truth. There are many kinds of grinding, just as there are many kinds of machining, and a cylinder well bored is infinitely preferable to one poorly ground. Moreover, the perfection of cylinder, piston and rings is not necessarily reached when they are ground, however well the grinding may be done; but when the piston and rings fit the cylinder with the least possible leakage of the charge of gas. The finishing of these parts is now frequently carried beyond the grinding process, being worked together with oil and a small quantity of some mild abrasive substance until there is a nearly perfect bearing at all points.

The scraping of bearings to produce a good fit is another process which, though expensive, pays for itself in the long run by the increased life of the bearing and the improved running of the machine of which it is a part. The careful selection of materials and the painstaking care devoted to the proportioning of forgings and castings have had the effect of practically abolishing the time-honored practice of making a doubtful point "too strong" so as to be sure.

Castings and forgings are made smooth and well proportioned, and no longer present the clumsy, lumpy appearance that once characterized unfinished parts. Not only are different steels, irons and bronzes used for different parts, but the materials are frequently subjected to strict physical tests and chemical analyses to ensure their being equal to the requirements; for it is not difficult to appreciate the fact that a part that is made as small as is consistent with safety will not possess a sufficient margin of strength if the material used is inferior to that which the designer had in mind when the dimensions were determined upon.

The list might be continued almost indefinitely, showing that the tendency to "let it go at that" has given way to a perception of the necessity for carrying improvements in materials and methods to the highest practicable point, if the American high-class automobile is to compete on even terms with the foreign product. Judging from the occurrences of the past year, it is evident that such competition, on a wholesale scale, is a matter of the near future, and that American manufacturers will be found standing on the firm ground of honest, up-to-date engineering.

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An Outing for the Orphans. The announced intention of the New York Motor Club to provide a day's automobile outing for orphans in the metropolitan district has apparently engaged the sympathies of press and public. June 7 is the date set for the festivity, and the destination Coney Island. The fame of the objective point is enough in itself to awaken the happiest anticipations in the little dependent ones; and to go there in automobiles—their imaginations could compass no more.

The idea was spontaneous and more credit to the automobilists for that, and yet had it not been the undertaking is one that would do credit to any body of men, and surely one that puts the automobilist in a more pleasing public attitude than as the unwilling tenant of a police cell, in which newspaper readers expect to view him with their morning coffee and rolls.

It is of interest to record the birth of the idea. About two years ago when Messrs. Fetch and Krarup were covering the last few miles of the Packard transcontinental trip, a delegation of New York automobilists went to Central Bridge, in the upper end of the city, to welcome the travelers to Manhattan. And while they were waiting Col. K. C. Pardee, one of the group, suggested that it would be neighborly to invite the children of a near-by orphan asylum to take

a ride. In an instant motors were whirring and there was a dash for the asylum grounds, and then a procession of cars filled with wildly delighted youngsters who shouted their enjoyment in a way that caused a lump in many a driver's throat. And so when the incident was recalled at a club meeting by some of those who had been there and hadn't forgotten, there was an immediate vote to do it again in a larger way.

Already the idea is spreading to other towns, and we are informed that many inquiries have been received from clubs who desire to give a day's pleasure to the helpless and dependent. Discussing the project, one metropolitan daily says: "We once called them devil wagons, hereafter they are angel wagons." We doubt if there are many who own cars, and who are not otherwise unavoidably engaged on that day, who will be missing from the line when the little tots take possession.

GASOLINE STORAGE INSPECTION.

Special Correspondence.

WASHINGTON, D. C., April 3.—Acting under instructions of the District Commissioners, certain officials of the fire department are about to begin an inspection of local garages to see that no one is violating the law requiring persons storing gasoline to keep it in underground tanks.

The subject of gasoline storage was gone over this week at a conference between the District Commissioners, Fire Chief Belt and Fire Marshal Nicholson, when they met to consider the applications of a number of automobile concerns and owners of gasoline launches for permission to store, at one time, more than fifty gallons of gasoline in underground tanks. Recently three automobile companies were granted the privilege of storing from 100 to 120 gallons, and now the authorities are expecting applications from about fifteen other concerns for similar privileges, while several gasoline launch owners are also expected to file applications for special privileges. One automobile firm has asked permission to store 150 gallons in its tank, but the request was denied and announcement has since been made that the limit is 120 gallons, and in granting privilege to store this amount special attention will be given to each application.

NEW JERSEY ROAD BILL SIGNED.

Special Correspondence.

TRENTON, April 3.—Governor Stokes today signed Senator Hutchinson's road bill, which was introduced at the suggestion of Road Commissioner E. C. Hutchinson.

The new law provides for a codification of the road laws, and gives the road commissioner much more power than he now has concerning the way in which roads are built. Heretofore road building was left a great deal to the county authorities and the contractors.

Assistant Secretary R. W. Spangler, of the Chicago Automobile Club, is preparing a booklet for the use of automobilists who frequent the roads in and around Chicago. It will be illustrated with views of roads showing the dangerous points, and will contain a list of towns and villages where gasoline and other supplies can be obtained. The book will be ready for distribution early in June.

COMPROMISE MEASURE IN PENNSYLVANIA.

Provisions of a Bill Drawn After Hearing at Harrisburg Attended by Many Philadelphia Automobilists — Expected to Pass Both Branches of Legislature by Big Majorities.

Special Correspondence.

PHILADELPHIA, April 3.—As the result of a strong presentment of the automobilists' views by Ira Jewell Williams, a prominent attorney of Philadelphia last Tuesday, a very favorable and almost entirely satisfactory compromise bill was agreed upon after a hearing of both sides before the Senate Judiciary General Committee of the Pennsylvania Legislature at Harrisburg.

The outpouring of automobilists from all sections of the State was gratifying, the only disappointing feature of the "demonstration" being the failure of the A. A. A. to send a good talker or two to the capital to help the good work along. However, Mr. Williams' argument, supplemented by those of Isaac Starr, Jr., president of the Automobile Club of Philadelphia; A. N. Chandler, a director, and Harry A. Hart and Henry Longstreth, members of the same organization, and A. E. Maltby, president of the Philadelphia association of automobile tradesmen, proved quite convincing.

Among the telling points made by Mr. Williams were the statements that of the 2,000 political subdivisions of the State many have adopted ordinances prescribing maximum speed limits less than that set forth in the State law; that owing to the impossibility of his acquiring a knowledge of all these various ordinances the automobilist is harried and annoyed by warnings, hold-ups and actual arrests when, in fact, he is traveling at a rate of speed well within the limit allowed by the State law; that the policy of the State toward automobiles is a purely legislative function, which should be exercised generally and uniformly throughout the State; that every proper interest is safeguarded by the provision that the speed in cities and boroughs shall not exceed eight miles an hour, and outside the corporate limits of cities and boroughs twenty miles an hour, when that provision is followed by a further proviso that upon the immediate approach of persons or teams at intersections, and upon curves or sharp declines, the speed shall not exceed ten miles an hour.

For the opposition Lawyers Charles De Costa and William Schaefer, the former of Philadelphia and the latter from Montgomery county, argued in behalf of the townships; and, while forced to admit that Mr. Williams' arguments were, in the main, true, they held that the districts outside of and immediately adjacent to large cities should be protected from the lawlessness of reckless automobilists.

After a brief address by President Starr and a mollifying speech by Director Chandler, of the A. C. of P., the latter averring that the great majority of automobile owners were law-abiding gentlemen who were made to suffer for the derelictions of a few irresponsibles, a sub-committee of the Judiciary General Committee—consisting of Senators Roberts of Montgomery, Grim of Delaware and Brown of Philadelphia—was appointed to draw up a compromise measure. After two hours' hard work the compromise measure was put into shape and passed upon by the sub-committee, which will report it out of committee during the present week. A canvass of both branches of the Legislature reveals the fact that the compromise will pass in its present shape by a rousing majority—if not, indeed, unanimously.

SYNOPSIS OF THE BILL.

The principal provisions of the measure are as follows:

No automobile shall be operated upon the public highways until the operator has procured a license from the State Highway Department of Pennsylvania.

Every application for license shall give the name and address of applicant and be sworn to. No license shall be issued to any person under eighteen years of age. The license fee is $3, which will be appropriated for the use of the highway department.

When the license is issued the applicant will also receive two tags bearing the license number in figures not less than five inches high, one tag to be posted in a conspicuous place in front and the other at the rear of the car. Negligence with regard to the tags will invalidate the license, and not more than one state license number shall be carried on front or back of the vehicle, any license tag obtained in any other state being removed while the car is used in Pennsylvania.

Speed throughout the state is limited to a mile in six minutes (ten miles an hour) inside of corporate limits of cities and boroughs, and to a mile in three minutes (twenty miles an hour) outside of such limits, except that in thickly settled portions of townships of the first class where the commissioners keep posted in conspicuous places along the highways notices plainly readable from the road that the highway is within a township of the first class, and upon sharp curves, sharp descents, upon the immediate approach of any person or team, or while passing from the rear any team, and at the intersection of any crossroads, the speed shall not exceed one mile in six minutes. These speed restrictions are supplemented by the provision that no person shall drive at a greater speed than is reasonable regarding traffic, danger or injury to property or person at any time or place.

At least one fixed lighted lamp showing a fixed white light, visible at least 100 feet ahead, shall be carried during the period from one hour after sunset to one hour before sunrise; also one red light shall be visible in the reverse direction, and the rear number tag shall be sufficiently illuminated to be plainly distinguishable.

Good and sufficient brake or brakes are required, and a bell, horn or other signal device.

The driver of an automobile is given no more preference or right of way than any other user of the highway, and shall stop when signaled by the driver of a horse or other animal.

The license must be carried whenever the car is used and submitted for inspection whenever required by a constable or police officer. All licenses expire December 31.

Constables and police officers must arrest upon view and without warrant any person violating any of the provisions of the act, but if the defendant is unable to give sufficient bail for a hearing or for his appearance in court the magistrate or justice of the peace shall hold in custody the automobile. If after the trial sufficient bail has not been given, the magistrate shall make just and proper order for the disposition of the car.

Penalty for violation of any of the provisions of the law is a fine of $10, and on failure to pay the fine, imprisonment for not exceeding ten days; on conviction for a second offense the fine is $25, and on failure to pay this the license shall be revoked by the highway department for thirty days. All fines collected by the city, borough or township must be expended for the benefit of the public roads.

LEGISLATORS RECONSIDER.

Bills Before Connecticut Legislature Discussed—New Act Submtted.

Special Correspondence.

NEW HAVEN, April 1.—At a spirited meeting of the Farmers' Association, of the Legislature, Tuesday, at the capitol in Hartford, the automobile question was again taken up and discussed with a tenacity which showed that the agriculturists mean business, and from their attitude it appears highly probable that their votes will be cast for some change in the existing law.

Representative Marsh, of Waterbury, submitted a proposed automobile bill which he had been requested to draft. It conforms closely with the laws regulating motor vehicles in New York, Massachusetts and Pennsylvania, and fixes the speed limit at twenty miles an hour on country highways and one mile in six minutes within city or borough limits. The bill was discussed generally with others which the association is interested in.

Mr. Fosdick suggested that the president of the Hartford Automobile Club and other automobile owners be invited to attend a hearing or a meeting to discuss his bill limiting speed to twelve miles in cities and twenty miles outside of cities, and making certain requirements in regard to the right side of roads in the country.

Mr. Marsh pointed out that the penalty in Mr. Fosdick's bill was such that it was above the jurisdiction of justices of the peace. In July and August most courts are in vacation, and an embarrassment might result from such a provision.

On the motion of Senator Bush, the matter of an automobile bill was referred back to the association's special committee with a request that the report be given as soon as possible, as the assembly's committee on public health and safety, which has the matter under consideration, is about to have an executive session on the subject.

HOLMES' BILL PASSES HOUSE.

Special Correspondence.

DETROIT, April 3.—With an almost unanimous vote the objectionable Holmes' automobile bill was passed by the house of representatives on March 30, the vote being 77 to 1. It now remains for the senate to put its stamp of disapproval on the measure. Many believe the Wayne county senators representing Detroit and vicinity have sufficient influence to kill the measure in the higher branch of the assembly, and it is thought that many who voted for it in the house will lobby against it in the senate.

The bill, as it was passed, had been so amended that it restricts the speed to ten miles an hour in cities, applies the term chauffeur to hired drivers only, and makes it unnecessary for owners and members of their families to procure chauffeurs' license certificates.

Representative Smith, of Wayne, has the distinction of being the only man to vote against the bill, and he is now the idol of Michigan autoists.

HEARING ON L'HOMMEDIEU BILL.

Special Correspondence.

ALBANY, April 4.—As a result of the discussion of his bill to tax automobiles $2 per horsepower over 10 horsepower, which occurred before the Senate committee on taxation last Thursday afternoon, Senator L'Hommedieu has announced his intention of further amending his bill by making the rate $1 each for every horsepower of all automobiles except trucks, and providing for a dynamometer test whereby uniformity of power measurement may be established.

At Thursday's hearing Oliver O. Quayle, of Albany, representing the New York State Automobile Association, said that while the automobilists were not opposed to the principle of the measure provided it exempted them from other taxes, and the revenues raised by it were applied to the maintenance of good roads, they thought the exemption of cars under 10 horsepower would discriminate against the manufacturers of New York State, who build mainly high-powered cars.

Secretary Butler, of the Automobile Club of America, thought the bill inopportune, and suggested that it be allowed to lie over this year, a similar law in France having proved inefficient, as manufacturers underrated the horsepower of their cars.

Chairman Lewis, of the committee, said the committee was not disposed to report the bill in its present shape.

HILL CLIMB MAY 30.

Annual Boston Event Postponed from April 19—Course Not Selected.

Special Correspondence.

BOSTON, April 3.—At a meeting of the executive committee of the Massachusetts Automobile Club at the club house this evening, the racing plans of the season were discussed and it was decided to follow the usual custom and hold a hill-climbing contest and a race meeting. It has been the practise of the club to hold its hill-climbing contest of Patriot's Day, April 19, but this year the climb will be on Memorial Day, May 30. This change of date was necessary owing to the delay in making preparations. President Elliott C. Lee, of the club, has been ill for several weeks and was unable to call the committee together until this week. At the meeting the possibility of holding the climb at the usual time was discussed, but it was decided that with only a little more than a fortnight to get ready, issue the entry blanks, and make all the necessary preparations, it would be impossible. It was then decided to hold the climb on May 30. At that time there is no important contest on in this neighborhood, and it is expected that there will be a large number of entries.

As the Glidden tour and the White Mountains tournament come soon after May 30, the committee decided that it could not conduct a race meeting this spring, and, therefore, selected Labor Day, September 4, as the best time for the race meeting. The two best known racing men in the club, H. L. Bowden, of Waltham, and William Wallace, of Brookline, were appointed a committee with power to select other members, and also with full power in regard to the details of the climb and of the race meeting. The place for the climb was not specified, but it is likely to be held on the Commonwealth Avenue hill, where previous contests have taken place. The committee may find it desirable to select some other hill, and if it decides to take this action, it has the necessary power. The race meeting is likely to be held on the Readville track, where it took place last May, as this is the best available track in the vicinity of Boston. Entry blanks for the hill climb will be issued as soon as the committee has selected its other members and made the preliminary arrangements.

Grocer—Be that an auto out in front the store thar, Ezry?

Boy—I dunno, sir. I god such a cold I cadt smell nothink.—*Exchange.*

IMPORTERS FILE PROTEST.

Object to Ruling of French Club Regarding Vanderbilt Entries.

The action of the Automobile Club of France in announcing after the close of entries for the Gordon Bennett Cup race that the French team to compete in the Vanderbilt Cup race would be selected from the cars participating in the French elimination trials for the Gordon Bennett, is looked upon as most unfair to the American importers of French machines, and those who have purchased French machines with a view to entering them in the Vanderbilt race. The importers have taken the matter up, with the result that the following protest will be filed with the Vanderbilt Cup Commission:

"Whereas the success of the Vanderbilt Cup race has been due largely to the efforts of American importers of foreign cars, and

"Whereas entries for the Vanderbilt race were to have been made by American owners of French machines who had not entered for the International Cup, and

"Whereas no notification had been received in this country that French cars to be nominated for the Vanderbilt Cup race must first be entered for the International Cup until after entries for the latter had closed, and

"Whereas the continued popularity of French cars of high power in America is dependent largely upon their use in competition by gentlemen drivers, and

"Whereas the plan of selection proposed by the Automobile Club of France will make the French representation in the Vanderbilt Cup race a manufacturers' team with professional drivers, which is contrary to the spirit of the gift of the Vanderbilt Cup and discouraging to the purchase of high powered French cars by American gentlemen.

"Therefore, we, American importers of French automobiles, do hereby protest against the proposed plan of the Automobile Club of France to nominate for the Vanderbilt Cup race the five machines making the best showing in the French eliminatory trials for the International Cup race, and urge upon the Vanderbilt Cup Commission their good offices in seeking such change in the French plan of selection as will enable American owners of French cars to enter them for the French eliminatory trials for the Vanderbilt Cup race."

LAKEWOOD MEET ABANDONED.

As this issue of THE AUTOMOBILE goes to press it is learned that the Lakewood tournament set for April 25 to 29 has been abandoned. The Lakewood Motor Club came to this decision on Wednesday in deference to the prevailing sentiment in New Jersey against racing or fast driving on the public roads. The New Jersey law of 1903 expressly forbids driving a motor vehicle "in a race or on a bet or wager" on the public highways. A bill introduced at the last session of the legislature to legalize the running of properly conducted races on the road was killed in the Senate after passing the House.

NEW ENTERPRISE IN MEMPHIS.

Special Correspondence.

MEMPHIS, April 3.—The factory of the Memphis Automobile Company will soon be finished, the officers of the company hoping to begin the work of installing the machinery inside of two or three weeks. Most of the heavy pieces are already here. It is expected that within two months work will

be in progress on the first Memphis-made automobile.

The local company will get out a car fitted with the Pilcher compound automobile engine—a piece of machinery for which its inventor claims much. Since the company was first organized and the first exhibition engine built it has been found possible to reduce the number of parts of the engine and its weight considerably.

When the new company gets well started it expects to make every part of its cars and also to turn out engines for auto boats and other purposes.

INTERSTATE AUTO LINE.

Oklahoma Company Asks Franchise in Indiana for Odd Project.

Special Correspondence.

SOUTH BEND, Ind., April 3.—An application for a franchise to operate a line of passenger and freight automobiles in St. Joseph county was filed with the board of county commissioners last Friday by the Oliver Trackless Car Company, an organization capitalized at $5,000,000. The petition states that the company desires to operate its cars from Plymouth, in Marshall county, to South Bend, as a link in a line which the promoters declare they expect to put into operation from Indianapolis to Buchanan, Mich.

Frederick William Oliver, president of the company, who has been in South Bend for several days, says that he will have the line running by July 4 if the franchise is granted, as many of the cars for the system are already built. They are of the four-wheel drive type, those for city use to be driven by current from storage batteries and those for long country runs having a gasoline engine in connection with a dynamo. The motor car or tractor has seating capacity for twenty-eight passengers and is expected to be able to draw several trailers for freight. According to Mr. Oliver, who is making his headquarters in Chicago, the company has no stock to sell and asks no bonuses, the stock being held by Western and Southwestern men and the head office of the company being in Guthrie, Okla.

ECONOMY OF AUTOS.

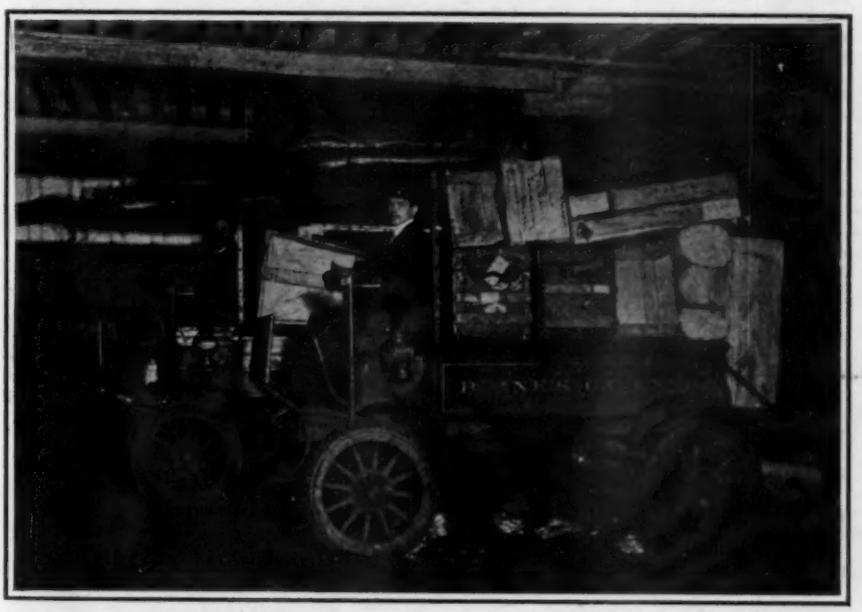
Chicago Express Company Pleased with Saving in Time and Expense.

Special Correspondence.

CHICAGO, April 3.—The experiment of using automobiles for the distribution of express matter has been so successful that A. P. Brink, one of the largest distributors of expressage in Chicago, will substitute them for vehicles drawn by horses. The exchange will be made gradually. At present, Mr. Brink employs seventy-five wagons and two automobiles. The machines have demonstrated their practicability to Mr. Brink's entire satisfaction.

Last September Mr. Brink installed two electric vehicles. After using them for a month he found that they could not be depended upon for the use he desired to make of them. Then he bought his first gasoline car. Since then, with the exception of a broken axle, which did not entirely disable the car, he has operated it continuously. A month ago he added a two-ton wagon, and next month he will have a three-ton gasoline truck in operation.

Chicago is a city of magnificent distances. The Brink's Express Company distributes express parcels in Evanston, twelve miles to the north; in Oak Park, twelve miles to the west, and in Englewood and Woodlawn, suburbs ten miles south of Chicago.



BRINK'S EXPRESS CO.'S GASOLINE WAGON STARTING WITH A LOAD FOR DELIVERY.

At 9 o'clock in the morning the two automobiles now operated by the Brink's system, start for Evanston. They make the trip in an hour. The best time that a team can make in the fairest weather, is two and one-half hours. Both the cars are back ready to be loaded for the western trip before noon. By 3 P. M. they are loaded for their trip to the south. Two machines are doing the work of six wagons in one-third of the time.

Mr. Brink has learned that keeping a horse shod and fed and cared for, will cost forty-nine cents a day. A team, of course, will double this expense. Three teams, exclusive of the driver, will cost about $3 a day. The driver's wages added will amount to $6.75 for three teams for one day. Their helpers will add $6 more. To operate the automobiles, the wages of the driver and helper, will be one day's wages for two men, instead of six, as with the machines. The cost of the gasoline is a fraction less than $1 an hour.

"The experiment has satisfied me that the automobile is the thing for me," said Mr. Brink. "There will never be a time that I will not have to keep some horses. In heavy snow and deep mud, the machines will not answer my purpose. But I shall continue to add to the number of machines I operate, until almost all the hauling will be done by them."

Mr. Brink's experience has been watched with interest by other men and his success will be followed by orders for machines for other commercial houses.

CANADIAN TRADE CONDITIONS

Dealers Optimistic Over Season's Prospects—New Firms Organized.

Special Correspondence.

MONTREAL, CANADA, April 3.—The automobile trade in this city is making great strides in comparison with last season, not only in the number of cars sold but in the number of agencies established. The climatic conditions of this section have operated against the popularity of the automobile, and it is believed this is largely responsible for the fact that there is not a city of its size on the American continent that is not far ahead of Montreal in the number of machines in use.

It is the general opinion in trade circles that the number of cars in use this season will probably double that of last year, and the principal demand will be for the large high-powered machines. Eighty-two cars were sold here during the past season, the majority being taken by residents of the city.

It is estimated that Canada will build during 1905, about 800 automobiles, of which the Packard Electric Co., of St. Catharines, Ont., will turn out probably 600; the Ford Motor Works, at Walkerville, 150, and the Canada Cycle and Motor Co., of Toronto, 50; and it is believed this section will furnish a ready market for this number.

The Automobile Repair Co., of Canada, is the name of a newly formed local firm which will conduct a general repair business, and handle second-hand machines. Ernest W. Sayer is manager of the new company. The Canadian Motor Car Company is also a recent addition to the trade, and will open a salesroom and garage in the Victoria Rink. F. B. Stockwell has charge of the business of this company, and will have associated with him Archie Burnett as mechanical superintendent. The Franco-American Automobile Co., still another new comer, is making a specialty of French accessories. The company is also Canadian representative of the Boyer and Humber cars.

La Compagnie d'Engineà Gasoline et Patrol de Roverbal, has been incorporated with headquarters at Roverbal, Quebec, and will manufacture motors for automobiles. The company is capitalized at $20,000.

The Montreal and Southern Counties Railway Co. has purchased the assets of the Montreal Auto Car Co., and obtained rights to operate an automobile passenger line over the Victoria Bridge, connecting with its electric car service on the southern side of the river. The capital of this company has recently been increased from $500,000 to $1,000,000.

An appropriation of $6,356,232 is provided for by the good roads bill recently introduced in the Pennsylvania Legislature.

A. C. A. GOVERNORS ACT.

Consider Parade and Show Plans and Adopt a Resolution.

The Automobile Club of America has taken another step in its efforts to discourage speeding by chauffeurs when alone in their employers' cars. At the meeting of the Board of Governors held on April 4 the following resolution was adopted, believing if it was strictly adhered to by the club members it would very largely tend to curb the recklessness of the drivers:

"That whereas it is against the policy of the Automobile Club of America for members to pay fines of chauffeurs arrested for exceeding speed limits when driving the cars without the presence of the owner,

"Thereby, be it resolved, that members of the Automobile Club of America be requested not to pay the fines of chauffeurs arrested under such circumstances."

A communication was read from the Automobile Club of France, announcing that July 5 had been selected as the date of the 1905 Gordon Bennett Cup race.

Those in attendance at the meeting were: Dave H. Morris, president; Winthrop E. Scarritt, John Jacob Astor, Emerson Brooks, Melville D. Chapman and William Pierson Hamilton.

W. H. Page, Jr., was added to the club's law committee, and the following applicants for membership were admitted:

George W. Perkins, De Lancy Nicoll, E. H. R. Green, John Sherman Hoyt, C. H. Platt, Arthur W. Eager, Justus D. Anderson, George Sheffield, Mark S. Willing, Maurice C. Steinbach, J. Ralph Jacoby, A. W. Teele, Harry J. Luce, G. R. McLane, George Huhn, I. N. Spielberg, Rawson Underhill, Edward Ryerson, Gilmer Clapp and Harry Harpley.

As a result of a meeting held last week, at which the members of the Show Committee met S. A. Miles, general manager of the N. A. A. M.; Benjamin Briscoe, of the American Motor Car Manufacturers' Association; President H. W. Chapin and David J. Post, of the Motor and Accessories Manufacturers' Association, and President C. R. Mabley, of the Importers' Automobile Salon, it is practically assured that the club will hold an automobile show during the coming winter. While no formal announcement was made, and no one was delegated to speak officially, it is generally believed that this move on the part of the club will meet with the approval and coöperation of the several organizations represented.

The club's May-Day parade, which, as previously announced, will be held on May 27, will form in the afternoon at Washington Square, and the route will be up Fifth avenue to 111th street, thence west to Seventh avenue, south to 110th street, west to Riverside Drive, around Grant's tomb, south to Seventy-second street, east to Broadway, and down Broadway to 65th street, where it will disband. The parade will be for pleasure vehicles only, delivery wagons and trucks being barred, and will be composed of five divisions, as follows:

M. M. Belding, Jr., grand marshal, with Captain Homer W. Hedge as aide; first division, American gasoline touring cars, Robert Lee Morrell, marshal; second division, American runabouts, C. H. Gillette, marshal; third division, foreign cars, E. T. Birdsall, marshal; fourth division, steam vehicles, Augustus Post, marshal; fifth division, electric vehicles, A. H. Whiting, marshal.

Actual steps toward the erection of the new clubhouse have been taken, tenants are vacating the buildings on the premises and the work of demolition has been commenced.

BAY STATE CLUBS ACTIVE.

Form Temporary Organization in Boston to Promote General Interests.

Special Correspondence.

BOSTON, April 3.—The movement which was recently started by the Bay State Automobile Association for united action among the clubs of the state in automobile legislation, and in other matters of general interest, gained decided impetus at a meeting held last Saturday in the rooms of the Association. At that meeting a temporary organization was formed with Daniel F. Gay, of the Worcester Automobile Club, as chairman, and J. C. Kerrison, of the Bay State Association, as secretary. It was decided to call another meeting for April 15, at which time it is expected that all of the clubs will be represented, and that a permanent organization will be formed. Those present Saturday included President Lewis R. Speare and J. C. Kerrison, of the Bay State Association; W. H. Chase, of the Wachusett club; Mr. Gay, of the Worcester club; C. M. Brown, of the Newton club, and Mr. Burbeck of the Brockton club. The Berkshire and Springfield clubs sent communications expressing interest in the plan and promising full coöperation.

Francis Hurtibis, Jr., legislative counsel of the Bay State Association, addressed the meeting, and told of good work done at the State House, whereby two unfavorable measures had been killed and two others so amended that they were robbed of the sections most hostile to automobilists.

After the meeting the Bay State Association entertained the visiting delegates at a club night.

ORPHANS' AUTOMOBILE DAY.

New York Motor Club Plans Novel Outing for Early June.

At the meeting of the directors and members of the runs and tours committee of the New York Motor Club, held on Tuesday, April 4, active preparations were commenced for the proposed orphans' automobile outing which the club has scheduled for June 7. Vice-president S. A. Miles is chairman of the committee in charge of the arrangements. Machine owners of the city are being requested to lend their cars, in the hands of competent chauffeurs, for use on that date, and already about 100 cars have been promised. The parade will be formed at the Circle, 59th street and Central Park West, and the children given a ride through the city, after which a run will be made to Coney Island where they will be dined as guests of the club.

Secretary Louis R. Smith will at once communicate with the various clubs throughout the country, giving them details of the proposed outing, in the hope of having them take similar action in their respective localities, and thus set apart June 7 as a National Orphans' Automobile Day.

On Saturday, April 15, the club will hold its first run of the season, going to Tappan's Sheepshead Bay, where dinner will be served, and the return trip will be made in the evening.

BUFFALO CLUB MOVES.

Is Settled in Comfortable Rooms in Teck Theater Building.

Special Correspondence.

BUFFALO, April 3.—The Automobile Club of Buffalo is now settled in its new and comfortable rooms in the Teck Theater Building. The rooms are all large, furnished in the latest style and are claimed to be among the finest automobile quarters in the country. Two new billiard and pool tables have been put in, and one of the features of the new quarters is a spacious dining-room, a greatly missed feature at the old Franklin street house. The decorations of the dining-room, which will be open to all club members, are elaborate.

Secretary Dai H. Lewis has issued notices relative to the change and announcing a "house-warming" to come off in the near future. He has requested all members to meet at the clubrooms on April 19 for the purpose of voting on a resolution to authorize the board of governors to incorporate the club under the laws of the state of New York.

At a club meeting several days ago thirty-one new members were admitted. This now places the membership at 500, which is the membership limit. There are twenty-three applicants on the waiting list and at a meeting of the board of governors to be held this week, the by-laws fixing the membership limits probably will be changed so as to admit those on the waiting list and others desirous of becoming members.

LOUISVILLE CLUB MEETING.

Decides to Incorporate and Increase Membership to 250.

Special Correspondence.

LOUISVILLE, April 3.—At an enthusiastic meeting of the members of the Louisville Automobile Club held last Thursday night definite steps were taken to incorporate the club and to increase its membership. Papers will be prepared within the week and will bear the signatures of twenty-five well-known local owners and drivers as incorporators.

A membership committee was appointed and instructed to secure every owner and driver of an automobile in the city as a member of the organization. The membership now numbers about 100, and it is expected that this will be increased to 250 before the end of the year.

President George H. Wilson announced that every owner and operator in the city will be sent a pamphlet containing the rules governing speed in the city and in the public parks and such other information as is necessary to the proper use of automobiles in Louisville. Resolutions approving the new automobile ordinance were adopted, and a vote of thanks was given the Mayor and members of the General Council. It was stated at the meeting that although automobiles had been operated in Louisville for five years past, only one person had been run into, and that no serious injury or damage had been inflicted.

Preparations were made for the annual meeting of the club, April 13, when officers

will be elected and a Dutch lunch served. The annual dinner will be given at the New Seelback Hotel some time in May.

The action of the club and the enthusiasm shown at the meeting guarantee a decided impetus to automobiling in Louisville.

NOTES OF THE CLUBS.

BROOKLYN.—The regular weekly run of the Long Island Automobile Club was held on Sunday, April 2. Starting from the clubhouse at 10 o'clock in the forenoon eighteen cars, carrying fifty-eight passengers, made the run to Manhasset Bay Yacht Club, Port Washington, L. I., and returned late in the afternoon. Those who participated in the run were: Robert Lee Morrell, Locomobile; Charles Kenyon, White; A. R. Pardington, Franklin; Clement Ashberry, Packard; T. N. Allen, Franklin; F. Stephenson, Pope-Toledo; Jerome Edwards, Cadillac; W. P. Richardson, Royal Tourist; W. Bristol, Franklin; R. W. Bainbridge, Peerless; Ray D. Lillibridge, White; R. L. Stilson, Ford; L. R. Hopkins, Apperson; Louis R. Adams, Autocar; H. M. Brigham Northern; Joseph Tracy, Renault; W. Rutter, Knox, and L. H. Allen, Locomobile.

DENVER, COLO.—At the regular monthly meeting of the Denver Automobile Club, held the latter part of March, Judge G. J. Gavin, of New Mexico and J. S. Temple, of the Denver Chamber of Commerce, were present and made addresses in favor of employing convict labor in the construction of the proposed highway from the Colorado-New Mexico line through Trinidad, Pueblo, Colorado Springs, Denver and Fort Collins. New Mexico already has the construction of the road. It will commence at El Paso, Tex., and be built through to the Colorado-New Mexico line. It is expected within a few years Wyoming will appropriate a sufficient amount to extend the thoroughfare to Yellowstone Park, making the grandest scenic thoroughfare in the country.

PITTSBURG.—Following are the nominations for officers of the A. C. of Pittsburg for the ensuing year, to be elected formally at a meeting the third Wednesday in May: President, George E. Turner; vice-presidents, James Francis Burke, E. J. Kent and George H. Flinn; treasurer, Edward Kneeland; secretary, W. Linford Smith; governors, George L. Hailman, H. W. Urling, Paul Wolf and W. C. Temple. At the last meeting of the club an amendment to the constitution of the club was offered providing for the annual election in January instead of May. This is to give the committees appointed by the incoming president a chance to get down to work before the season opens.

PHILADELPHIA.—The Automobile Club of the University of Pennsylvania will hold its first run of the season on Sunday, April 9, the objective point of the outing being historic Valley Forge. The club, which is now a year old, has twenty-seven members. An effort will be made by the Racing Committee—F. H. Scott, T. E. Allison and J. G. Gibson—to arrange a race with the Princeton Automobile Club during the early summer.

JACKSONVILLE, FLA.—At a recent meeting of local automobilists the Jacksonville Automobile and Motor Boat Club was permanently organized, and the following officers elected: H. A. McEachern, president; Charles A. Clark, first vice-president; Fred E. Gilbert, second vice-president, and Herbert Pace, secretary-treasurer.

WASHINGTON SHOW RESULTS.

Thirteen Exhibitors Close Twenty-Six Sales, with Others Pending.

Special Correspondence.

WASHINGTON, D. C., April 3.—Promptly at 11 o'clock Saturday night the lights in the Washington Light Infantry Armory were turned off and the local automobile show for 1905 came to an end. All things considered, it was a good show, marked by fine weather, large attendance and some sales. Barring the opening and closing nights, the attendance was not so large as expected, but it was as large as last year and bore the stamp of good quality. It was plain to be seen that the majority of the visitors at this year's exhibition were interested in automobiles and desired to get all the information they could. Exhibitors got in touch with many a likely buyer who otherwise might never have been reached, and, looking at the show from this viewpoint, it was highly successful.

Thirteen different concerns exhibited automobiles, and between them they made twenty-six sales. However, a number of them have sales pending which they expect to close within a day or two, and it can be safely said that the total number of sales made directly as a result of the show will be thirty-five. With one or two exceptions the exhibitors are entirely satisfied with the results, and all agree that the show will help materially the sale of cars during the next few months.

The trade is expanding rapidly, and at the present time there are about twenty firms and individuals selling automobiles here.

PITTSBURG SEASON OPENING.

Local Interest Growing—Roads to Nearby Points Being Improved.

Special Correspondence.

PITTSBURG, April 3.—Spring weather during the past fortnight has brought out the automobilists, and many new cars are seen on the streets, nearly all of high power and evidently intended for touring purposes. Despite the fact that Pittsburg, topographically, is not particularly well suited for automobiling, and the roads in this section are far from satisfactory for the use of any kind of vehicle, there are about 1,000 machines owned here. Among the more prominent owners are H. C. Frick, C. M. Schwab and F. T. F. Lovejoy, members of the local steel and iron aristocracy, who devote much time to touring in this country and abroad. W. H. Park and C. W. Bray, also connected with local steel interests, are owners of 1905 Thomas cars.

Members of the younger set are much in evidence this year, and many of them are enthusiastic automobilists. Julian Kennedy, Jr., son of one of Pittsburg's foremost engineers, uses a Pope-Toledo; E. H. Jennings, Jr., son of a prominent banker, is driving a Franklin, while T. K. Laughlin, of the iron and steel firm of Jones & Laughlin, is owner of an Autocar. Loyall A. Osborne, of the Westinghouse Company, has perhaps the most attractive car in the city, a White steamer, fitted with limousine body in royal blue.

The women, too, are joining the ranks, and often seen driving their cars through the streets and in the parks of the city. Mrs. A. W. Mellon has a new Pope-Waverley electric, and Mrs. W. H. Donner handles her Franklin with the skill of an expert.

Considerable attention is now being given to road improvement, the objective points being the Allegheny County Club at Sewickley, and the Oakmont Country Club at Hulton Station, and it will be a matter of but a short time when the city will be connected with these points with splendid macadam roads.

NEW GARAGE FOR BROADWAY.

Smith and Mabley Building New Home in Uptown Auto Center.

Work was commenced this week excavating for the new garage of Smith & Mabley, Inc., which is to be erected on Broadway between 56th and 57th streets, New York. The new building will have a frontage on Broadway of 106 feet, with an L extension fronting 80 feet on 56th street. The extreme depth from Broadway will be 170 feet, while the 56th street side will have a depth of 100 feet. The elevation on Broadway will be three stories, and that on the street will be four stories. These dimensions will furnish a total floor space of 76,250 square feet, with a storage capacity for 450 machines. The building will be chiefly constructed of stone and brick, and the completed cost is estimated at $250,000. It will be equipped with the most modern appliances for the care and repair of machines; separate elevators will be installed for passengers and machines, the latter fitted with a turntable to facilitate the handling of the cars. Club quarters will be provided for chauffeurs, and 300 lockers for the use of owners of machines.

The salesroom and offices will occupy the ground floor in the Broadway portion of the building, and the garage entrance will be on 56th street. The assembling department of the S. & M. Simplex machines, a product of the company, as well as the general repair department, will be located on the top floor of the 56th street side. A feature of the new quarters will be the department of supplies, as a complete assortment of parts for the several makes of cars handled by the company will be carried in stock.

The building will be ready for occupancy about September 1, and will then be the home in this country for the S. & M. Simplex, Mercedes, Panhard and Renault machines.

PACIFIC COAST TRADE ACTIVE.

Special Correspondence.

SAN FRANCISCO, March 27.—The number of 1905 cars sold in San Francisco and neighboring cities since the first of the year exceeds the number sold in any previous year by a large majority. In addition to this fact there has been noted a very much larger demand for touring cars of higher price and greater power. The dealers in the standard cars of the better class report, almost without exception, that they have sold out practically their entire allotment of 1905 cars, and that most of these have been sold before received. The Coast sales are retarded to a considerable degree by the fact that it is almost impossible to secure delivery as desired, or even of the full number of cars ordered. A prominent enthusiast tried a week ago to secure the immediate delivery of a car of any of the standard makes, costing from $3,000 to $5,000, of not less than thirty horsepower, and was unable to do so. The best promise for delivery he could obtain was ten days. Practically every car now in transit billed for the Coast is already sold. Nearly 100 touring cars of the 1905 models have been sold in Northern California since January 1.

Nordy—I believe I'll get married.

Butts—Don't do it, old man. Get an automobile. You'll find it equally exciting and less expensive in the long run.—*Exchange.*

The Standard Roller Bearing Company, of Philadelphia, has purchased the machinery, merchandise, assets and good will of the steel ball business of the Federal Manufacturing Company, of Cleveland. The assets secured by this transaction consist of about 300 machine tools of various descriptions, 5,000 small tools and more than a million steel, brass and bronze balls, all of which will be removed to Philadelphia, where the Standard Roller Bearing Company recently purchased a plot of ground 300 by 200 feet adjoining its present factory, on which to erect a building for the accommodation of this additional machinery. This addition to the plant will not be ready for occupancy before June, and in the meantime the ball plant of the Federal company will be operated for the Standard company under the management of F. M. Germane, who for a number of years has had charge of the Western territory for the former company.

As an opening for the automobile racing season at Brighton Beach, it is announced that Charles G. Wridgway, of New York, will start on Friday, May 5, in an effort to break the 1,000-mile track record now held by the Packard. Mr. Wridgway expects to continue running his car until the start of the second race on the program for May 6, he being one of the competitors in the first event of the meet. The Brighton Beach track is now open for practice, with free accommodations in its stables for cars.

The Auto-Car Equipment Co., of Buffalo, will remove to its new factory at 77 and 79 Edward street, where it will maintain a first-class garage in addition to its manufacturing and selling business. The new factory is a three-story brick building, modern and thoroughly equipped, conveniently located in the downtown section. The garage will have a capacity for fifty cars. Secretary Olmsted, of the company, was last week elected president of Kenmore village, a residence suburb of Buffalo.

The International Motor Car Supply Co., Inc., has opened quarters at 41 West 33d street, New York, with J. E. Jarridge as secretary and treasurer and Paul L. Snutsel, vice president and general manager. The company is sole agent for the United States, Canada and Cuba for the L'Electro Industrielle; it also handles the Optimo non-skid tires, and conducts a wholesale and retail business in general supplies for automobiles and motor boats.

The latest invader of Philadelphia's "Automobile Row" is The Motor Shop, Incorporated, which has established a three-story garage at 317-319 North Broad street. The sum of $7,000 will be expended in new tools and parts. This concern has acquired the local agency of the Royal Tourist, Pungs-Finch and Queen cars, and is preparing to secure a fair share of the automobile trade of the Quaker City.

In order to meet the demand for runabouts, it is announced that the Winton Motor Carriage Co., of Cleveland, will market a car of this type, known as its Model C, with a single seat and a deck provided with receptacle for tires and luggage.

The Citizens Transit Co., of Cleveland, which has announced its intention to operate a line of electric 'buses in that city, has inaugurated a touring car service known as "Seeing Cleveland," similar to that now being conducted in the larger cities throughout the country. The cars have a seating capacity of twenty-six persons.

Thomas A. Edison and Prof. F. H. Hutton, of the engineering department of the Columbia College, are among the recent purchasers of White steamers through Carl H. Page, manager of the New York branch of the White Sewing Machine Co.

In the advertisement of the Northern Mfg. Co., which appeared on page 83 of the Advertising Section of THE AUTOMOBILE of March 25, through a compositor's error the price of the 18-horsepower side-entrance touring car was given as $1,007, whereas the price of this car is $1,700.

The Sandusky Automobile Co., of Sandusky, O., has been reorganized, and is turning out its runabouts, a number of which are now ready for delivery. The company has also completed a light tonneau runabout, and expects to be ready to make deliveries of this model about April 15.

R. A. Rainey, of Lakewood, N. J., well known in automobile circles, was married on Monday of this week to Miss Bertha Andrews, also of Lakewood. Mr. Rainey and his wife sailed on Tuesday for Europe, where they will spend about three months touring on the continent.

The Automobile Depot, Inc., which has located at 215-217 West 48th street, New York, is sole agent for Greater New York and New Jersey for the French built Corre cars. In addition to its salesrooms, a thoroughly equipped garage is being conducted.

In the advertisement of the Berkshire Automobile Co., which appeared on page 72 of the Advertising Section of THE AUTOMOBILE of March 25, its cars are described as "air-cooled." This was a clerical error, and should have read "water-cooled."

Morgan & Wright, automobile tire and rubber goods dealers of Chicago, have recently opened branch stores at Cleveland, O., and Atlanta, Ga., and established agencies in Syracuse, Boston, Philadelphia, Minneapolis and Los Angeles.

Pittsburg automobilists have decided to hold a hill-climbing contest in May, a race meet for professional drivers at Brunots Island in June and one for Pittsburg Club members at the same track in September.

Truman H. Newberry, an enthusiastic automobilist of Detroit, and a director of the Packard Motor Car Co., has been appointed by President Roosevelt to the post of Assistant Secretary of the Navy.

Frank A. Sanford has secured the Greater New York agency for the Yale cars, the product of the Kirk Mfg. Co., of Toledo, O., and has opened an attractive salesroom at 1653 Broadway.

The Bouton Motor Co., Inc., M. D. Bouton, president, has opened automobile rental and salesrooms at 110 West 41st street, New York.

The Weston Auto Supply Co. has opened a salesroom at 1378 Grant square, Brooklyn, where it will conduct a jobbing supply business in automobile sundries.

The Oak Park Machine Co., of Oak Park, Ill., has been incorporated at $5,000, and secured quarters at 214-216 Randolph street, that city, where it will conduct a garage and contracting machine business, and in addition handle a full line of automobile supplies. The company would like to hear from manufacturers of cars and supplies with a view to securing agencies for desirable lines.

A side-entrance touring car with detachable rear seat will soon be put on the market by the Northern Manufacturing Co.

J. B. Duke, head of the American tobacco trust, is a recent purchaser of a 30-horsepower Pope-Toledo touring car.

The Wayne Auto Co. has opened a branch store at 1659 Broadway, New York.

RECENT INCORPORATIONS.

Morris Park Motor Racing Club, New York; capital, $30,000. Incorporators, Dave H. Morris, J. H. Harding and J. S. Bunting, all of New York.

Tallman Motor Car Co., New York; capital, $30,000. Directors, J. A. Tallman, L. M. Fessler and W. F. Shirwood, all of New York.

Rajah Auto Supply Co., New York; capital, $75,000. Directors, D. B. Mills, East Orange; J. C. Travis and F. A. Cox, of New York.

Touring and Observation Co., New York; to operate automobiles for hire; capital, $50,000. Directors, J. J. Croghen, Scranton; A. F. and W. C. Mack, of Brooklyn.

Wayne Automobile Co. of New York; capital, $25,000. Directors, O. L. Kull, H. A. Lehman and D. B. Nally, of New York.

Massachusetts Automobile Co., to deal in automobiles; capital, $25,000. President, George B. Smith, Lynn; treasurer, Henry Hastings, Boston.

Motor Touring Car Co., to manufacture and rent automobiles; capital, $25,000. Incorporators, Florence M. Fox, C. A. Sheehan and F. A. Fox, all of New York.

La Salle-Niagara Auto Co., to manufacture motors and cars under patents of George E. Whiteside. Directors, Harry Highland and Clinton M. Johnson, of Niagara Falls, and John A. Reynolds, of La Salle.

Torbensen Motor Car Co., Bloomfield, N. J.; capital, $500,000. Incorporators, Viggo V. Torbensen, William Douglass Moore, of Bloomfield; Charles E. Turner, Franklin H. Wright and Hal S. Taylor, of New York.

New York Motor Car Co., New York; capital, $25,000. Directors, A. B. McMurtry and H. W. Pratt, Manhattan, and George Lavaberty, Brooklyn.

French Automobile Co., Rumford Falls, Me., to deal in automobiles; capital, $100,000. President, W. S. Smith; treasurer, J. A. Nile, of Rumford Falls.

Union League Automobile Co., Brooklyn; capital, $50,000. Directors, C. C. Tegethoff, Raine Elwell and H. M. Kennedy, all of Brooklyn.

North Jersey Automobile and Engineering Co., Hackensack, N. J.; capital, $5,000. Incorporators, N. Demarest Campbell, Luther A. Campbell and George W. Conklin, Jr.

Detroit Automobile Co., Detroit; capital stock increased from $2,000 to $80,000.

Smalley Motor Co., Detroit; capital stock increased from $60,000 to $80,000.